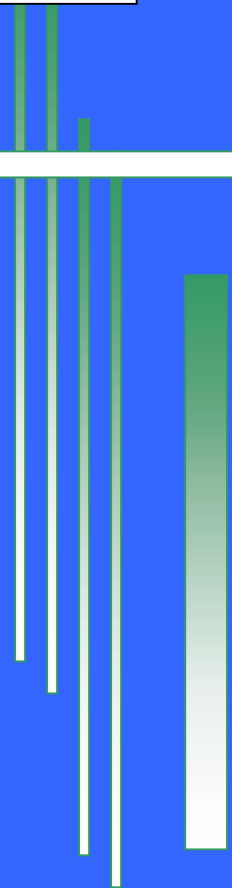


DRAFT



THE PERFORMANCE REFERENCE MODEL VERSION 1.0



 A Standardized Approach to IT Performance



VOLUME I: VERSION 1.0 RELEASE DOCUMENT

FEAPMO

FEDERAL ENTERPRISE ARCHITECTURE
PROGRAM MANAGEMENT OFFICE

The Federal Enterprise Architecture Program Management Office



The Performance Reference Model Version 1.0:

A Standardized Approach to IT Performance

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Volume I: Version 1.0 Release Document



EXECUTIVE SUMMARY

Information Technology (IT) is one of the greatest potential enablers of government performance. As such, the President's Management Agenda focuses on "Expanding E-Government" and represents a critical opportunity for agencies to improve performance by leveraging IT. Agencies have shown uneven progress in managing IT in this respect. This is in part because a common and consistent framework for IT performance measurement did not exist.

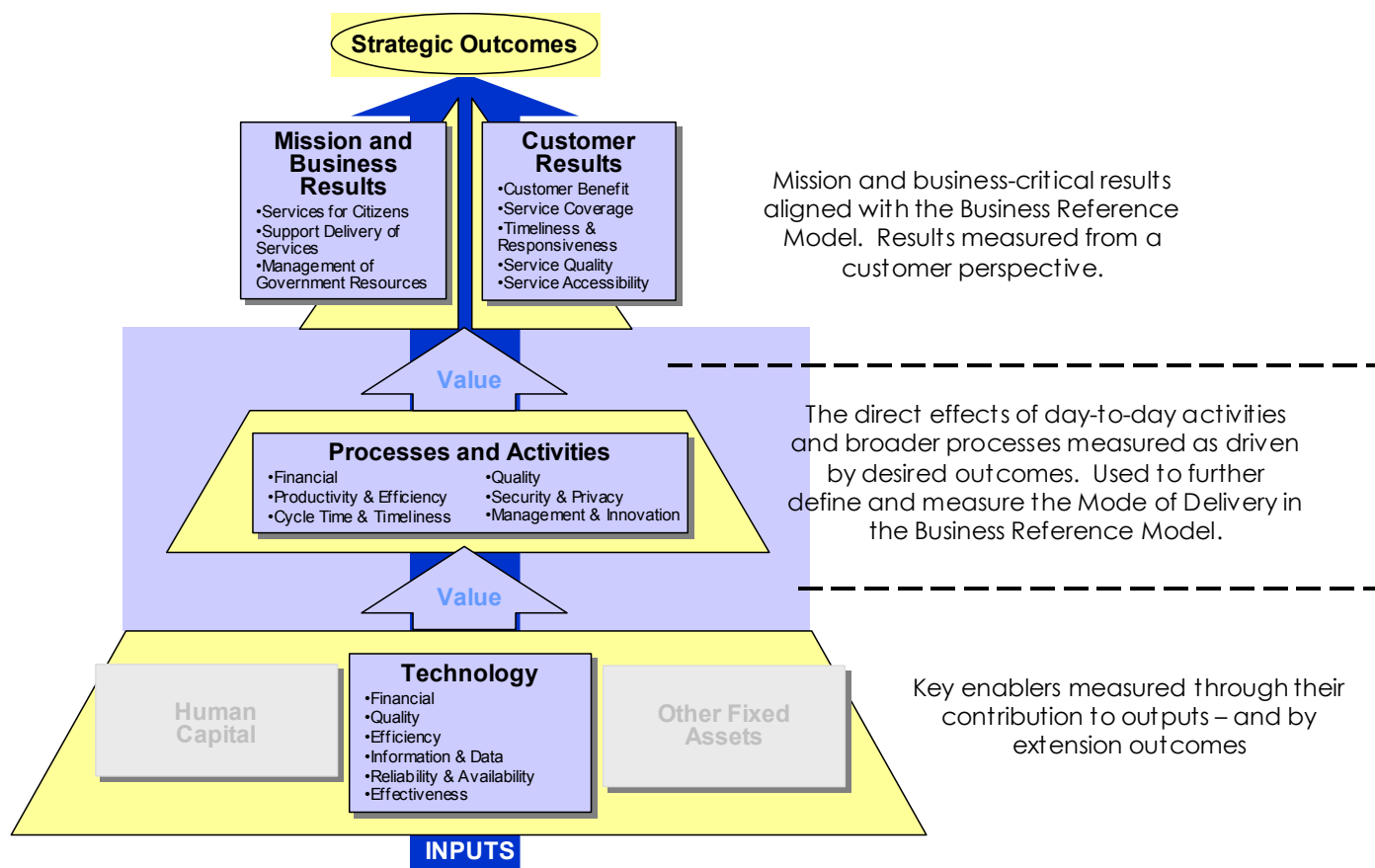
In response, the Federal Enterprise Architecture Program Management Office (FEA-PMO) is providing the Performance Reference Model (PRM). Below are some key facts about the PRM and how it will be applied during the FY 2005 budget formulation process.

- *The PRM is a standardized framework to measure the performance of major IT initiatives and their contribution to program performance;*
- *Agencies can "operationalize" the PRM for their specific environment and IT initiatives;*
- *Though examples are provided, how agencies "operationalize" the PRM will define the actual contents of the model;*
- *The PRM can be used by agency-specific IT initiatives and by cross-agency IT initiatives;*
- *The PRM does not create new management processes, but rather reinforces and informs those that exist, including the strategic planning process, Program Assessment Rating Tool (PART), and IT budget process;*
- *Agencies will be required to use the PRM in their FY 2005 Exhibit 300s ONLY for major IT initiatives classified as new Development, Modernization, or Enhancement; and*
- *The PRM Version 1.0 is a starting point from which to evolve towards ever-improving performance measures for IT.*

The PRM is designed to serve three main purposes:

1. Help produce enhanced IT performance information to improve strategic and daily decision-making;
2. Improve the alignment—and better articulate the contribution of—IT to business outputs and outcomes, thereby creating a clear "line of sight" to desired results; and
3. Identify performance improvement opportunities that span traditional organizational structures and boundaries.

As shown on the following page, the PRM includes four Measurement Areas for FY 2005: Mission and Business Results, Customer Results, Processes and Activities, and Technology. In each area, there are Measurement Categories. Each of these categories includes Generic Measurement Indicators that agencies can tailor or "operationalize" indicators for their environment.



The PRM structure is designed to clearly articulate the cause and effect relationship between inputs, outputs, and outcomes. This “line of sight” is critical for IT project managers, program managers, and key decision-makers to understand how and to what extent technology is enabling progress towards outputs and outcomes.

The transformation required to implement the President's Management Agenda—and E-Government in particular—requires the PRM to be either directly used or understood by OMB, Chief Information Officers, Chief Technology Officers, Chief Financial Officers, and most important program and IT project managers. Each has a critical role in (1) using the PRM to identify indicators and/or (2) using progress towards PRM indicators to make more informed and data-driven IT management and funding decisions.

The PRM Version 1.0 was developed using a collaborative and iterative process designed to leverage existing approaches and best practices, while also creating a practical framework that would achieve the purposes required.

In summary, the PRM is a flexible tool designed to help agencies improve IT performance. While PRM Version 1.0 is a starting point, lessons learned from its preliminary use for new IT investments and further discussion with agencies and key councils, such as the CFO Council, will drive the improvement from this version to future versions.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	II
TABLE OF CONTENTS	IV
INTRODUCTION	6
1. THE CASE FOR IMPROVEMENT.....	7
THE MANDATE FOR CHANGE	7
THE CHALLENGE AHEAD	8
2. A FRAMEWORK FOR IMPROVEMENT	10
WHAT IS THE PERFORMANCE REFERENCE MODEL?	10
What Are the Key Facts About the PRM?.....	10
What is the PRM's Purpose and How is it Structured?.....	11
Mission and Business Results Measurement Area	13
Customer Results Measurement Area.....	14
Processes and Activities Measurement Area	16
Technology Measurement Area	17
Human Capital Measurement Area	18
Other Fixed Assets Measurement Area.....	19
WHAT ARE SOME EXAMPLES OF THE PRM BEING APPLIED?	19
3. WHO CAN BENEFIT FROM USING THE PRM	22
WHO CAN USE THE PRM?.....	22
Office of Management and Budget.....	22
Chief Information Officers and Chief Technology Officers	23
Chief Financial Officers and Budget Officials	23
Program and IT Project Managers	23
WHEN WILL THE PRM BE USED?	24
4. HOW WAS THE PRM DEVELOPED AND HOW DOES IT FIT WITH THE REST OF THE FEA?	25
HOW WAS THE PRM DEVELOPED?	25
WHAT IS THE FEDERAL ENTERPRISE ARCHITECTURE?	27
Business Reference Model	28
Service Component Reference Model	28
Technical Reference Model	29
Data and Information Reference Model	29
Federal Enterprise Architecture Management System	30
5. WHAT HAPPENS NEXT WITH THE PRM?	31
THE PRM IS A RESOURCE TO IMPROVE PERFORMANCE	31
THE FEA-PMO WILL CONTINUE TO COMMUNICATE WITH AGENCIES	32
PROVIDING COMMENTS ON THE PRM AND OTHER FEA REFERENCE MODELS	33
NEXT STEPS FOR THE PRM	33
APPENDIX A: MISSION AND BUSINESS RESULTS MEASUREMENT CATEGORIES, GENERIC MEASUREMENT INDICATORS, AND EXAMPLES	34
SERVICES FOR CITIZENS.....	36
SUPPORT DELIVERY OF SERVICES	43

MANAGEMENT OF GOVERNMENT RESOURCES	46
APPENDIX B: CUSTOMER RESULTS, PROCESSES AND ACTIVITIES, AND TECHNOLOGY MEASUREMENT CATEGORIES, GENERIC MEASUREMENT INDICATORS, AND EXAMPLES	49
CUSTOMER RESULTS	50
PROCESSES AND ACTIVITIES	53
TECHNOLOGY	57
APPENDIX C: KEY TERMS AND LIST OF SOURCES	62
KEY TERMS AND ACRONYMS	62
LIST OF SOURCES	64

INTRODUCTION

E-Government is one of the five initiatives that comprise the President's Management Agenda because of its importance in facilitating a more responsive and effective government. To achieve the President's objectives, the federal government must derive more productivity from its information technology (IT) spending, currently nearly \$60 billion. A cornerstone to success is the development of a federal enterprise architecture that enables agencies to derive maximum benefit from applying IT to their missions. The Federal Enterprise Architecture (FEA) reference model framework is a set of tools that enable the federal government to improve performance, increase collaboration, and reduce costs across the federal IT portfolio. The FEA will facilitate horizontal (cross-federal) and vertical (federal, state, and local governments) integration of IT resources, and establish the "line of sight" contribution of IT to mission and program performance. The result will be a more citizen-centered, customer-focused government that maximizes technology investments to better achieve mission outcomes.

The FEA consists of a series of "reference models" designed to facilitate cross-agency analysis and improvement:

- The Performance Reference Model (PRM) - The PRM is a framework to measure the performance of major IT initiatives and their contribution to program performance. The PRM will help agencies produce enhanced performance information; improve the alignment and better articulate the contribution of inputs, such as technology, to outputs and outcomes; and identify improvement opportunities that span traditional organizational boundaries.

- Business Reference Model (BRM) - The BRM is a function-driven framework to describe the Lines of Business and Sub-functions performed by the federal government independent of the agencies that perform them.

- Service Component Reference Model (SRM) - The SRM provides a common framework and vocabulary to characterize the IT and business components that collectively comprise an IT investment. The SRM will help agencies rapidly assemble IT solutions through the sharing and re-use of business and IT components. A component is a self-contained process, service, or IT capability with pre-determined functionality that may be exposed through a business or technology interface.

- Technical Reference Model (TRM) - The TRM provides a foundation to describe the standards, specifications, and technologies supporting the delivery, exchange, and construction of business or service components and E-Government solutions. The TRM unifies existing agency TRMs and E-Government guidance by providing a foundation to advance the re-use of technology and component services from a government-wide perspective.

Additionally, a Data and Information Reference Model (DRM) is currently under development.

This release document, Performance Reference Model Version 1.0 "Volume I: Version 1.0 Release Document," describes in detail the Performance Reference Model. The FEA-PMO has also published guidance and user information about the PRM in "Volume II: How to Use the PRM."

1

The Case for Improvement: Why a PRM is Necessary

FEAPMO

I. THE CASE FOR IMPROVEMENT

This section provides an overview of why the federal government needs a Performance Reference Model (PRM).

THE MANDATE FOR CHANGE

Information Technology (IT) is one of the greatest enablers of government performance. Recognizing this, the President's Management Agenda (PMA) focuses on "Expanding E-Government" and represents an important opportunity for agencies to deliver quantum leaps in achieving results and serving citizens at lower cost.¹

"Implementation of E-Government is important in making government more responsive and cost-effective."

President George W. Bush

July
10, 2002

However, many federal agencies are still struggling to appropriately capitalize on the opportunities IT presents—and do so in a way that achieves results and improves services for citizens. In some areas, IT has already proven to be

¹ "Implementing the President's Management Agenda for E-Government: E-Government Strategy," U.S. Office of Management and Budget. April 2003.

an enabler to not only improve the performance of an individual agency, but a catalyst for improvements across agencies. For example, some of the 24 Presidential Priority Initiatives are showcases of how agencies can work together—enabled by IT—to achieve results and deliver improved services to citizens:

- GovBenefits now provides one-stop access to information and services on almost 200 government programs. A half-million citizens visit the site per month to determine their potential eligibility for government benefit programs.

- IRS Free Filing is a single point of access to free on-line tax preparation and electronic filing services. The site is provided by industry partners in a joint effort to reduce burden and cost to taxpayers.

- Recreation.gov provides one-stop access to America's national parks and public recreation areas. Three-quarters of a million citizens visit the site per month to access information about nearly 2000 recreation opportunities.

Beyond the world of just IT, agencies are also being challenged to improve the quality of their performance information and integrate that with budget decision-making. The PMA also focuses on "Budget and Performance Integration." This effort includes using performance information to make budget decisions and linking performance and cost in a performance budget format. For the first time during FY 2004 budget formulation, standardized program evaluations were performed on federal programs comprising 20 percent of the total federal budget. The Program Assessment Rating Tool (PART) asks questions about the program's purpose, planning, management, and results. The findings of these PART assessments were considered during the budget decision-making process. An additional 20 percent of programs will be assessed through PART during the FY 2005 budget formulation process.

Taken together, the Expanding E-Government and Budget and Performance Integration initiatives of the PMA present a significant challenge—and tremendous opportunity to improve federal performance.

THE CHALLENGE AHEAD

Over the last decade agencies have made progress in the areas of IT performance management and measurement. Nevertheless, significant work still remains if agencies are to make the needed performance improvements and meet the existing performance requirements.²

More specifically, IT management and measurement practices still need significant improvements. For example, more than half of the roughly 1400 major IT initiatives in the federal portfolio were identified on OMB's "At-Risk-List" in the President's FY 2004 Budget. Many of these initiatives were at risk because of their inability to demonstrate their value consistent with the principles of performance management and measurement. More broadly, 17 of the 26 federal agencies evaluated received a "red" in Budget and Performance Integration on the most recent President's Management Agenda scorecard.

² "Budget of the United States Government, Fiscal Year 2004," U.S. Office of Management and Budget. February 3, 2003; and "Urgent Business for America: Revitalizing the Federal Government for the 21st Century," The National Commission on the Public Service. January 2003.

Further evidence of the improvements needed has been presented by key oversight organizations during the last few years.

■ Senate Committee on Governmental Affairs – In its 2001 report, “Government at the Brink,” highlighted numerous examples demonstrating overall weakness in performance management and measurement.

■ U.S. General Accounting Office – In its 2003 report “Major Management Challenges and Program Risks: A Governmentwide Perspective,” cited the limited ability of agencies to articulate how IT contributes to program outcomes. GAO has also on numerous occasions identified the improvements needed in collaborating around cross-cutting programs and functions.

■ U.S. Office of Management and Budget – Reported in the President’s FY 2004 Budget the findings of the first PART assessments, which concluded that half of the more than 230 federal programs rated could not demonstrate results. Another 20 percent were adequate or ineffective.

Moreover, there is a legislative framework—much of which has existed for some time—that governs how agencies are to make these improvements in performance management and measurement.

■ E-Government Act of 2002 - Collaborate and develop consistent IT performance measures.

■ Clinger-Cohen Act of 1996 - Make technology investment decisions based on contribution to program performance.

■ Government Performance and Results Act of 1993 - Plan and report how resources are used to achieve outputs and outcomes.

■ Chief Financial Officers Act of 1990 and other related Acts – Provide timely, reliable, useful, and consistent financial information to improve decision-making.

Agencies have shown uneven progress in meeting these requirements. This is in part because a common and consistent framework for IT performance measurement did not exist. To assist agencies, OMB’s Federal Enterprise Architecture Program Management Office (FEA-PMO) is providing the Performance Reference Model (PRM) to help agencies make the needed improvements in IT performance and meet existing requirements related to IT.

2.

A Framework for
Improvement: What
is the PRM?

FEAPMO

2. A FRAMEWORK FOR IMPROVEMENT

This section provides an overview of the PRM and examples of how it can be applied.³

WHAT IS THE PERFORMANCE REFERENCE MODEL?

U.S. citizens are demanding that their government be more efficient and effective. To meet these demands, agencies and OMB must be certain that all investments, including IT initiatives, contribute to improving performance and producing results. In this context, the FEA-PMO is providing the PRM as a tool to help agencies more clearly justify and better manage their proposed IT investments.

What Are the Key Facts About the PRM?

In addition to understanding the purpose and structure of the PRM, it is important that agencies understand how the PRM will be applied during the FY 2005 budget formulation process.

■ The PRM is a standardized framework to measure the performance of major IT initiatives and their contribution to program performance.

³ The FEA-PMO has also published detailed guidance on using the PRM consistent with existing management processes in *Volume II: How to Use the PRM*.

- Agencies can “operationalize” the PRM for their specific environment and IT initiatives.
- The PRM can be used by agency-specific IT initiatives and by cross-agency IT initiatives.
- The PRM does not create new management processes, but rather reinforces and informs those that exist, including the GPRA planning and reporting process and IT budget process.
- Operationalized Measurement Indicators agencies use in the PRM will be informed and determined by the GPRA and budget planning process, PART assessments, and other drivers.
- Agencies will be required to use the PRM in their FY 2005 Exhibit 300s ONLY for major IT initiatives classified as new Development, Modernization, or Enhancement (DME).
- For each major DME IT Investment, the Exhibit 300 will require agencies to identify at least one Operationalized Measurement Indicator in each of four Measurement Areas: (1) Mission and Business Results, (2) Customer Results, (3) Processes and Activities, and (4) Technology. The collective use of Measurement Indicators in these four areas is imperative to providing a clear “line of sight” from an IT initiative to results.
- The PRM Version 1.0 is a starting point from which to evolve towards ever-improving performance measurement. All of the FEA-PMO reference models, including the PRM, are meant to evolve over time. The FEA-PMO will use the lessons learned from applying the PRM to DME IT initiatives and increased outreach to develop and release PRM Version 2.0.

What is the PRM's Purpose and How is it Structured?

The PRM is a standardized framework to measure the performance of major IT initiatives and their contribution to program performance. This standardized framework has three main purposes:

1. Help produce enhanced IT performance information to improve strategic and daily decision-making;
2. Improve the alignment—and better articulate the contribution of—IT to business outputs and outcomes, thereby creating a clear “line of sight” to desired results; and
3. Identify performance improvement opportunities that span traditional organizational structures and boundaries.

The PRM is driven by a legislative framework for IT performance consisting of the E-Government Act of 2002, the Clinger-Cohen Act of 1996, and the Government Performance and Results Act of 1993. The PRM also leverages the best of existing approaches to performance measurement in the public and private sectors, including the Balanced Scorecard, Baldrige Criteria, Value Measurement Methodology, program logic models, the value chain, and the theory of constraints. In addition, the draft PRM was informed by what agencies are currently measuring through GPRA, Enterprise Architecture, IT Capital Planning and Investment Control, and PART assessment findings. Section 4 of this document provides more detail on how the PRM was developed.

The PRM is structured around Measurement Areas, Measurement Categories, and Measurement Indicators.

■ **Measurement Areas** – The high-level organizing framework of the PRM that captures aspects of performance at the input, output, and outcome levels. The draft PRM includes six measurement areas: Mission and Business Results, Customer Results, Processes and Activities, Human Capital, Technology, and Other Fixed Assets. Human Capital and Other Fixed Assets will not be used in FY 2005 budget formulation.

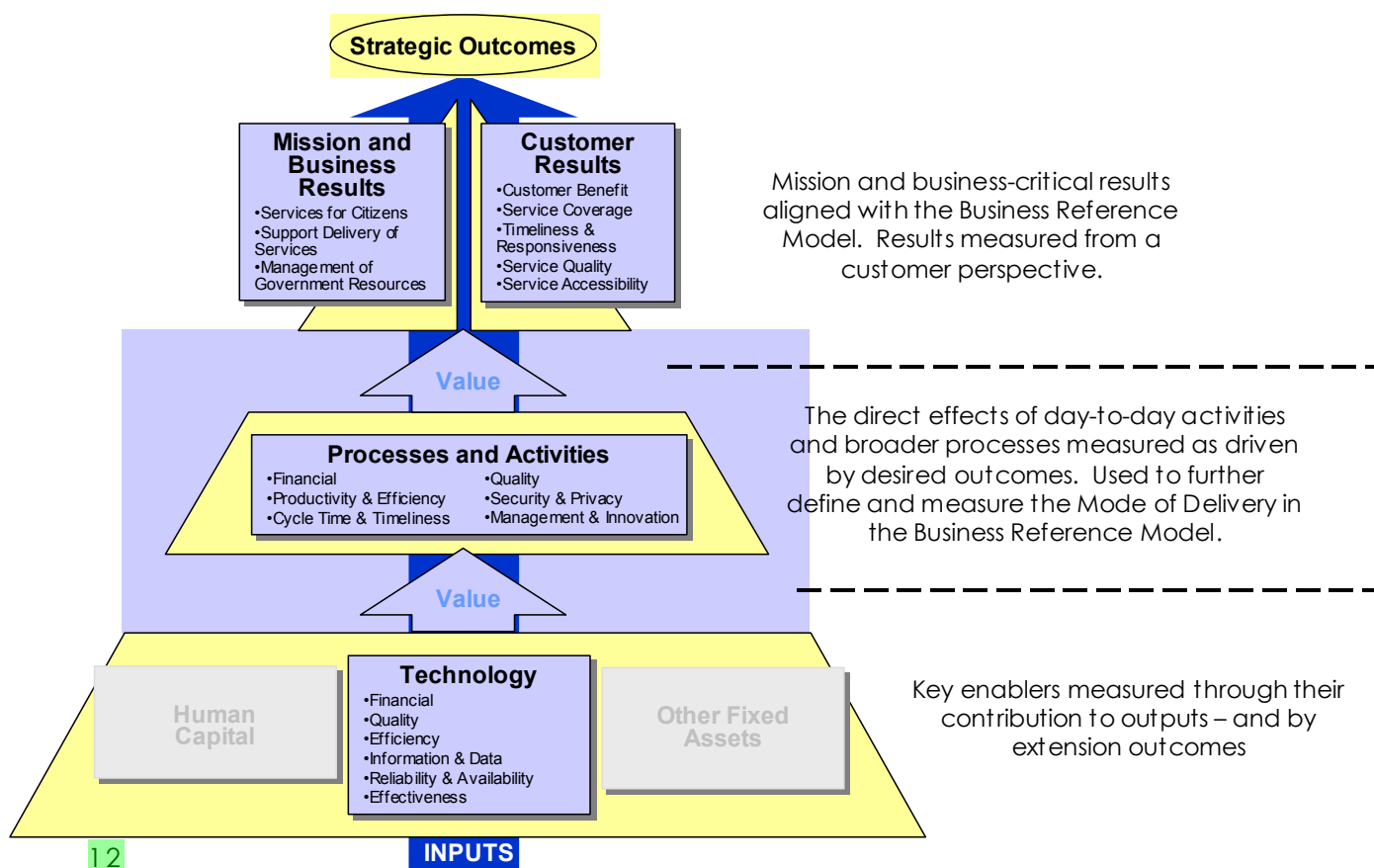
■ **Measurement Categories** – Groupings within each Measurement Area that describe the attribute or characteristic to be measured. For example, the Mission and Business Results Measurement Area includes three Measurement Categories: Services for Citizens, Support Delivery of Services, and Management of Government Resources.

■ **Generic Measurement Indicators** – The generic indicators, for example delivery time, that agencies then “operationalize” for their specific environment.

Importantly, the Generic Measurement Indicators included in the PRM are merely starting points for agencies. In their FY 2005 Exhibit 300s, agencies will need to “operationalize” the four Generic Measurement Indicators they propose to use for each major IT initiative classified as DME. Agencies are free to tailor these operationalized Measurement Indicators so that they fit the agency’s specific environment and the IT initiatives specific goals. As agencies use the PRM over time, these Operationalized Measurement Indicators will evolve and comprise the actual and most useful contents of the PRM.

Figure 1 below provides a graphical representation of the Performance Reference Model.

FIGURE 1: PERFORMANCE REFERENCE MODEL VERSION 1.0



The PRM structure is designed to clearly articulate the cause and effect relationship between inputs, outputs, and outcomes. Though this relationship is rarely direct cause and effect, the PRM structure seeks to “tease out” the contribution an IT initiative makes to improved process and business performance (which when measured may only be a mere association).

This “line of sight” is critical for IT project managers, program managers, and key decision-makers to understand how and to what extent technology is enabling progress towards outputs and outcomes. The PRM captures this “line of sight” to reflect how value is created as inputs (such as Technology) are used to help create outputs (through Processes and Activities), which in turn impact outcomes (such as Mission and Business). This structure builds from the concepts of the value chain, program logic models, and the theory of constraints. Guiding the entire PRM are “Strategic Outcomes,” which represent broad, policy priorities that drive the direction of government (such as to Secure the Homeland or Expand E-Government). Conversely, the PRM is also structured to allow the desired outcomes an organization seeks to achieve to determine the outputs and technology needed.

Mission and Business Results Measurement Area

The Mission and Business Results Measurement Area of the PRM is intended to capture the outcomes that agencies seek to achieve. These outcomes are usually developed during the agency budget and strategic planning process prescribed under GPRA. This means that an IT initiative using the PRM will need to refer to these other existing processes to identify the Mission and Business Results the IT initiative is contributing to. This requires a strong partnership between the IT and business communities within an agency.

To ensure the outcomes that agencies identify are appropriately aligned to what agencies actually do, the Mission and Business Results Measurement Area is driven by the Business Reference Model (BRM). More specifically, the PRM's Measurement Categories are the same as the BRM's Business Areas and Lines of Business. The Generic Measurement Indicators of the PRM are the same as the Sub-functions of the BRM. These areas of the BRM seek to identify the purpose of the government activity. By extension the Mission and Business Results Measurement Area of the PRM seeks to identify the extent to which those purposes are being achieved.

Few if any IT initiatives can directly achieve Mission and Business Results. Many factors outside the control of not only an IT initiative, but federal programs determine whether true outcomes are achieved. However, understanding the desired Mission and Business Results as early as possible in the IT lifecycle is critical to ensure that IT initiatives are developed and managed in a performance and business-driven context.

The Mission and Business Results Measurement Area is comprised of the following Measurement Categories:

- The Lines of Business in Services for Citizens;
- The Lines of Business in Support Delivery of Services; and
- The Lines of Business in Management of Government Resources.

OMB Circular A-11 for FY 2005 requires agencies to identify the primary BRM alignment in the Unique Project ID for all proposed IT initiatives. This link between the BRM and the PRM provides the starting point to determine not only the purpose that the IT initiative supports, but how pro-

gress towards achieving that purpose can be measured. Building from this primary alignment to the BRM, agencies will identify a corresponding Operationalized Measurement Indicator through the PRM for each major IT initiative that is DME in FY 2005.

Examples of Operationalized Measurement Indicators in this Measurement Area include:

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Environmental Management	Environmental Monitoring and Forecasting	# of lives saved through tornado warnings provided to the public
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Education	Higher Education	Postsecondary education enrollment rates for all students
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
General Government	Taxation Management	% of individual returns filed electronically
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Planning and Resource Allocation	Enterprise Architecture	Degree to which agency migrates to its IT Enterprise Architecture
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Human Resources Management	Staff Recruitment and Employment	% of agency leadership that report OPM enabled them to develop and maintain a workforce to meet their missions

Appendix A of this release document provides the entire list of Measurement Categories and Generic Measurement Indicators for the Mission and Business Results Measurement Area. Additional examples of selected Operationalized Measurement Indicators are also provided.

Customer Results Measurement Area

The Customer Results Measurement Area of the PRM is intended to capture how well an agency or specific process within an agency is serving its customers. This is a critical aspect of successful E-Government. However, the diverse nature of federal programs means that there are many customers spanning the citizen, business, other government, and internal categories. Further, the nature of these relationships varies immensely. Some customers receive direct government services, such as veterans receiving health care from the Veterans Health Administration. Other “customers” are those subject to regulatory activities, such as large businesses conforming to safety regulations administered by the Occupational Safety and Health Administration. This is why the PRM allows agencies to operationalize the Measurement Indicator that appropriately reflects their desired relationship with their customers.

The Customer Results Measurement Indicator captured in this Measurement Area will be associated with the most external customer of the process or activity the IT initiative supports (e.g. citizens, businesses, or other governments). Not all Customer Results are meaningful or even distinct for every IT initiative. For example, for IT initiatives that support processes with federal employees as their customers, “customer” satisfaction and “IT user” satisfaction may in fact be the same.

Whatever the specific circumstances, the purpose of the Customer Results Measurement Area is to identify the customer relationship and articulate how it can be measured over time.

Despite difficulties, including the Paperwork Reduction Act limitation on burdening customers with surveys, the notion of customer results is important to consider and capture. As shown in the examples in Appendix B, customer surveys are not the only way to measure Customer Results. As with Mission and Business Results, few IT initiatives will directly or solely achieve Customer Results. Nevertheless it is still important to use customer needs as a guiding principle when developing and managing IT initiatives.

The Customer Results Measurement Area is comprised of the following Measurement Categories:

- Customer Benefit - Customer satisfaction levels and tangible impacts to customers as a result of the products or services provided;
- Service Coverage - The extent to which the desired customer population is being served and customers are using products and services;
- Timeliness & Responsiveness - Time to respond to customer inquiries and requests and time to deliver products or services;
- Service Quality - Quality from the customer's perspective and accuracy of responses to customer inquiries; and
- Service Accessibility - Availability of products and services to customers and the extent of self-service options and automation.

Examples of Operationalized Measurement Indicators in this Measurement Area include:

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Customer Benefit	Customer Satisfaction	% of Medicare recipients satisfied with CMS services

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Customer Benefit	Customer Satisfaction	% of buyers of numismatic and commemorative coins satisfied with U.S. Mint services

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Service Quality	Accuracy of Service or Product Delivered	% of grant funding packages meeting customer requirements

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Service Coverage	New Customers & Market Penetration	# of citizens filing taxes electronically for the first time

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Timeliness & Responsiveness	Delivery Time	% of Enterprise Architecture requirements, guidance, and deliverables provided to agency EA staff on schedule

Appendix B of this release document provides the entire list of Measurement Categories and Generic Measurement Indicators for the Customer Results Measurement Area. Additional examples of / or language to help agencies develop Operationalized Measurement Indicators are also provided.

Processes and Activities Measurement Area

The Processes and Activities Measurement Area is intended to capture the outputs that are the direct result of the process that an IT initiative supports. These outputs are much more under the control of federal programs and generally contribute to or influence outcomes that are Mission and Business Results and Customer Results. This Measurement Area also captures key aspects of processes or activities that need to be monitored and/or improved.

Nearly all IT initiatives are designed to support or improve a single or set of processes or activities. This is generally where an IT initiative's contribution to improved performance can be most accurately measured. Nevertheless there are still many factors beyond the IT initiative's control that will determine the level of process performance. These factors include staff that manage or execute the process, statutory requirements, or inputs to the process such as benefits applications or information from other processes.

The desired outputs for a process or activity should strongly influence (1) whether technology is needed to improve or support the process and (2) if so, what technology is needed to help the processes or activities achieve the desired outputs.

As with Mission and Business Results, use of the Processes and Activities Measurement Area should use the BRM as the starting point. The BRM includes a Mode of Delivery Business Area that is designed to identify at a very high level the process that is being used to achieve an intended purpose. The Measurement Indicator(s) agencies choose should be an extension of the Mode of Delivery the IT initiative aligns with. For example, if an IT initiative aligns with the Federal Financial Assistance Mode of Delivery in the BRM, the PRM can be used to determine the Quality of how that financial assistance is delivered.

The Processes and Activity Measurement Area is comprised of the following Measurement Categories:

- Financial - Achieving financial measures, direct and indirect total and per unit costs of producing products and services, and costs saved or avoided;
- Productivity & Efficiency – The amount of work accomplished per relevant units of time and resources applied;
- Cycle Time & Timeliness - The time required to produce products or services;
- Quality - Error rates and complaints related to products or services;
- Security & Privacy - The extent to which security is improved and privacy addressed; and
- Management & Innovation - Management policies and procedures, compliance with applicable requirements, capabilities in risk mitigation, knowledge management, and continuous improvement.

Examples of Operationalized Measurement Indicators in this Measurement Area include:

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Cycle Time & Timeliness	Cycle Time	% of tornado warnings that occur more than 20 minutes before a tornado forms
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Cycle Time & Timeliness	Cycle Time	Time to evaluate grant applications and notify institutions of award decisions
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Financial	Costs	\$ to government per tax return processed
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Financial	Savings & Cost Avoidance	\$ avoidance attributable to consolidations identified in Target EA

Appendix B of this release document provides the entire list of Measurement Categories and Generic Measurement Indicators for the Processes and Activities Measurement Area. Additional examples of / or language to help agencies develop Operationalized Measurement Indicators are also provided.

Technology Measurement Area

The Technology Measurement Area is designed to capture key elements of performance that directly relate to the IT initiative. An IT initiative generally can include applications, infrastructure, or services provided in support of a process or program. While these IT-specific aspects of performance (e.g. percent system availability) are important, they alone do not truly assess the value of an IT initiative to overall performance. This is why the Technology Measurement Area is far more relevant when used with other Measurement Areas to get a full and accurate picture of overall performance.

As with all other Measurement Areas, the Technology Measurement Categories and Generic Measurement Indicators are not an exhaustive list. Agencies may and should have many more Technology measures they use as part of their IT Capital Planning and Investment Control (ITCPIC) and Systems Development Lifecycle processes. However, this Measurement Area includes aspects of IT performance that (1) may be insightful to OMB and (2) best articulate the extent to which an IT initiative is contributing to improved process performance and by extension improved mission and customer results.

The Technology Measurement Area is comprised of the following Measurement Categories:

- **Financial** - Technology-related costs and costs avoided through reducing or eliminating IT redundancies;
- **Quality** – The extent to which technology satisfies functionality or capability requirements or best practices, and complies with standards;

- Efficiency - System or application performance in terms of response time, interoperability, user accessibility, and improvement in technical capabilities or characteristics;
- Information & Data - Data or information sharing, standardization, reliability and quality, and storage capacity;
- Reliability & Availability - System or application capacity, availability to users, and system or application failures; and
- Effectiveness – Extent to which users are satisfied with the relevant application or system, whether it meets user requirements, and its impact on the performance of the process(es) it enables and the customer or mission results to which it contributes.

Examples of Operationalized Measurement Indicators in this Measurement Area include:

Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Reliability & Availability	Reliability	% of unscheduled downtime for Advanced Weather Interactive Processing System (AWIPS) hardware
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Reliability & Availability	Reliability	% of unplanned downtime for grants management software
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Effectiveness	User Satisfaction	# of internal users satisfied with IRS Free-Filing
Measurement Category	Generic Measurement Indicator	Operationalized Measurement Indicator
Effectiveness	User Requirements	% of internal users who report using the EA management system as intended

Appendix B of this release document provides the entire list of Measurement Categories and Measurement Indicators for the Technology Measurement Area. Additional examples of / or language to help agencies develop Operationalized Measurement Indicators are also provided.

Human Capital Measurement Area

A review of legislative requirements and best practices shows that capturing the human capital aspects of performance is imperative. It is for this reason that the PRM Version 1.0 includes a “placeholder” for Human Capital. However, because the Human Capital Measurement Area will not be used for FY 2005, the PRM at this point does not include specific Measurement Categories. One of the key next steps the FEA-PMO will take as it begins to improve the PRM Version 1.0 will be to fully engage organizations such as the Office of Personnel Management and the newly formed Chief Human Capital Officers Council. The FEA-PMO will work collaboratively with these organizations and others to identify the key human capital requirements and a set of practical and usable Measurement Indicators in the Human Capital Measurement Area.

Other Fixed Assets Measurement Area

As with Human Capital, a review of legislative requirements and best practices shows that capturing the performance of other fixed assets (e.g. vehicle fleets, facilities, other equipment) is also critical. This is why PRM Version 1.0 also includes a “placeholder” for other fixed assets. However, because the Other Fixed Assets Measurement Area will not be used for FY 2005, the PRM at this point will not include specific Measurement Categories. The FEA-PMO will seek to engage officials knowledgeable about the management of other fixed assets as it begins to improve PRM Version 1.0.

WHAT ARE SOME EXAMPLES OF THE PRM BEING APPLIED?

As noted above, the PRM's true value comes not from each Measurement Area, but when multiple Measurement Areas are used in concert to understand the full value and contribution of an IT initiative. The examples below are intended to show how the PRM can be applied to three different types of IT initiatives. The examples in Figures 2, 3, and 4 on the following pages were developed by identifying actual measures agencies are using in their GPRA plans and reports to operationalize the Generic Measurement Indicator in the Mission and Business Results Measurement Area.

FIGURE 2: EXAMPLE OPERATIONALIZED MEASUREMENT INDICATORS FOR IRS FREE FILING

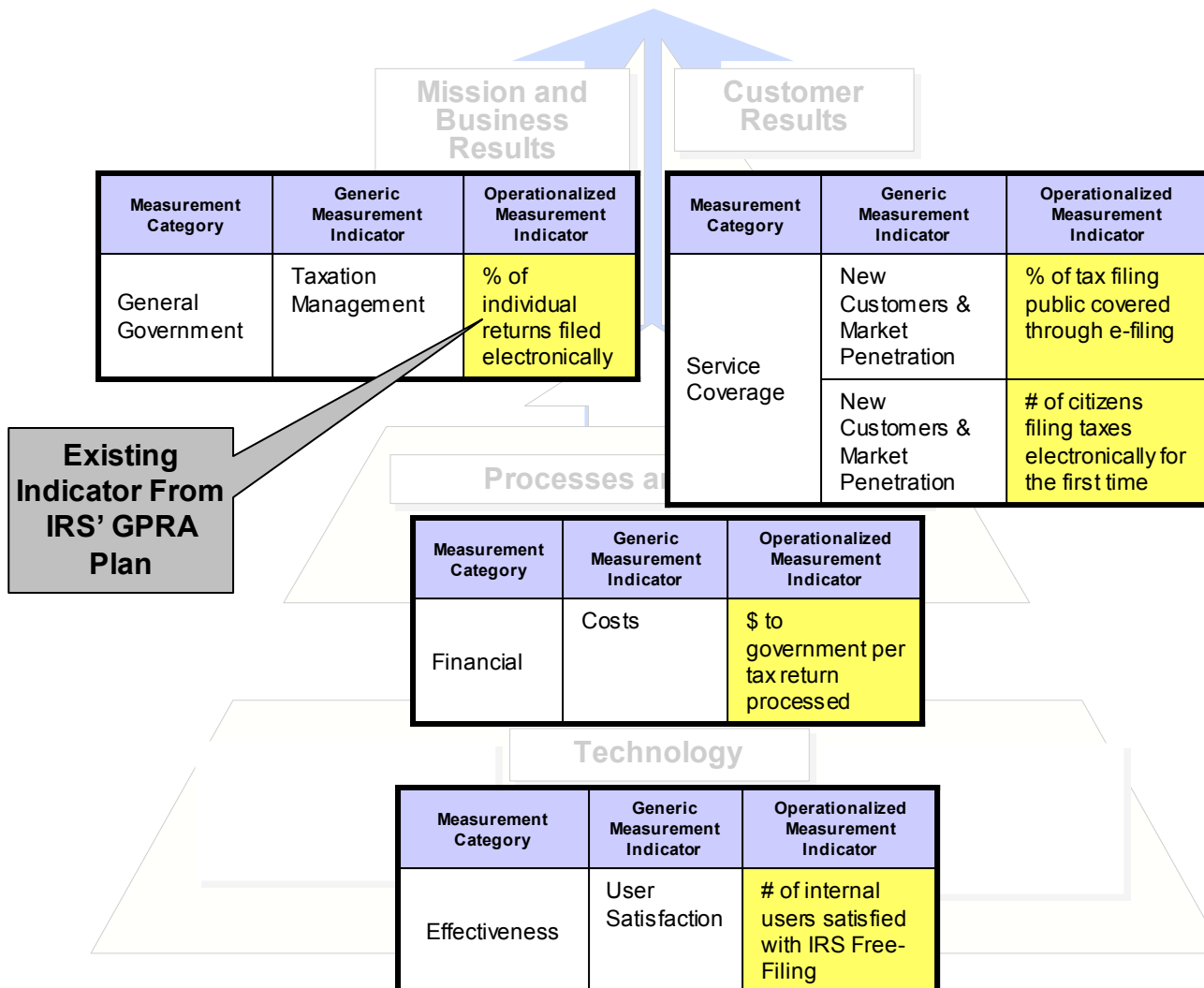


FIGURE 3: EXAMPLE OPERATIONALIZED MEASUREMENT INDICATORS FOR IT INITIATIVE SUPPORTING A GRANTS PROCESS

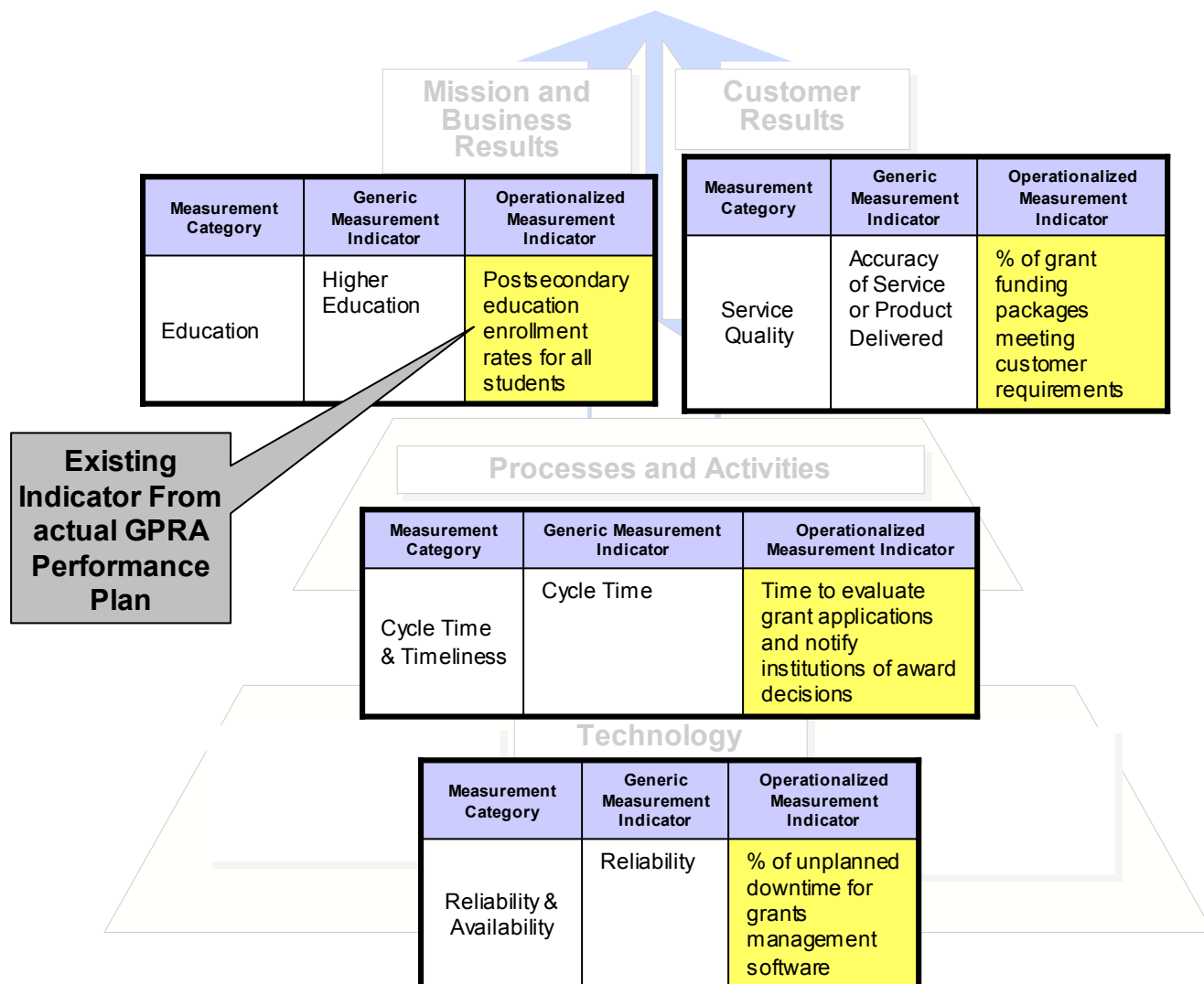
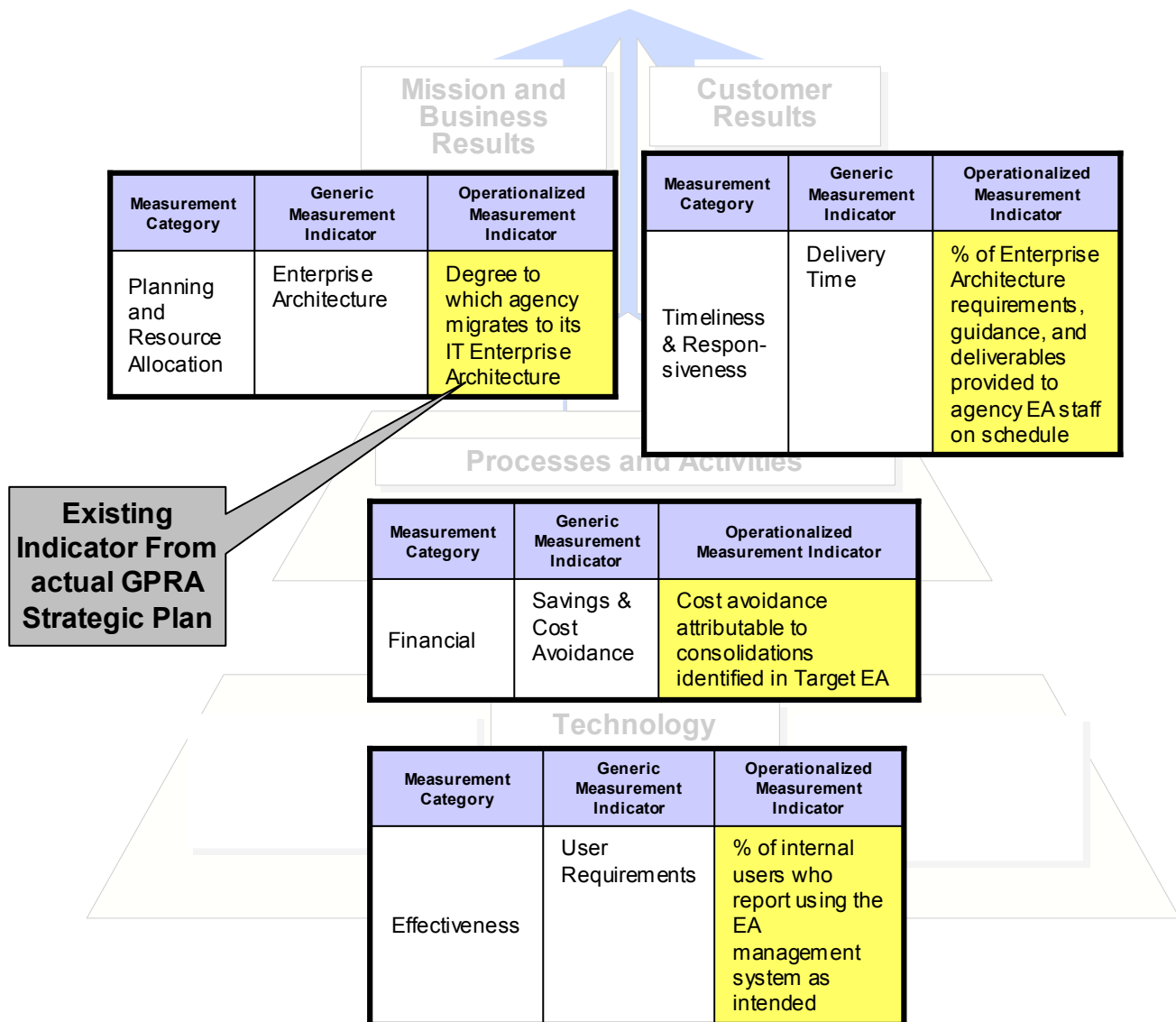


FIGURE 4: EXAMPLE OPERATIONALIZED MEASUREMENT INDICATORS FOR AN ENTERPRISE ARCHITECTURE INITIATIVE



Note that each example builds on the earlier individual examples provided for each PRM Measurement Area. Effective use of the PRM requires identification of Operationalized Measurement Indicators in each of the relevant Measurement Areas to draw the “line of sight” from the IT initiative to the processes and activities it supports—and by extension the customer results and mission and business results it enables. Also note that each example includes a manageable number of indicators that can be used to characterize success and drive progress towards it. Though the PRM includes many indicators, its value is not in the sheer number of indicators it includes. Rather, its value is realized when used to identify a critical few indicators that can provide information for decision-making.

“Volume II: How to Use the PRM” provides detailed guidance on how to select and operationalize Measurement Indicators.

3.

Who Can Benefit
from Using the PRM?

FEAPMO

3. WHO CAN BENEFIT FROM USING THE PRM

This section discusses who can use the PRM and provides a summary of how the PRM will be used during the FY 2005 budget formulation process. More detail on how the PRM will be used is provided in “*Volume II: How to Use the PRM.*”

WHO CAN USE THE PRM?

The transformation required to implement the PMA—and E-Government in particular—requires the PRM to be either directly used or understood by OMB, Chief Information Officers (CIO), Chief Technology Officers (CTO), Chief Financial Officers (CFO), and most importantly Program and IT Project Managers. Each of these entities has a critical role in (1) using the PRM to identify indicators or (2) using progress towards PRM indicators to make more informed and data-driven IT management and funding decisions.

Office of Management and Budget

Using the PRM to inform budget decisions can help OMB through providing:

- More detailed information about how proposed IT initiatives may contribute to outcomes. This additional information can help budget examiners decide whether to fund proposed IT initiatives or whether to recommend changes to proposed IT initiatives, including recommendations to collaborate with other agencies; and

- Standardized structure to assess the performance of IT initiatives that support programs with common or similar missions. This can include an assessment of how proposed IT initiatives will improve programs being assessed by PART that align with the same BRM Line of Business and Sub-function.

Chief Information Officers and Chief Technology Officers

Using the PRM to inform IT Capital Planning and Investment Control activities can help CIO and CTO staffs with:

- More clarity about what IT initiatives to select based on how they may be/are contributing to results and key mission requirements;
- Additional and more detailed performance information to use in the Control and Evaluate phases of the IT CPIC process; and
- Standardized structure to help identify collaboration opportunities within and outside the agency. Similar IT initiatives seeking to improve the performance of similar processes or serve similar customers could be coordinated to achieve the desired levels of performance at a reduced cost to either or both agencies.

Chief Financial Officers and Budget Officials

Using the PRM consistent with other ongoing financial activities and the budget process can help CFO and budget staff with:

- Additional performance information to use in GPRA and budget planning and reporting activities;
- Better articulation through GPRA of how IT budgetary resources contribute to program outcomes; and
- Standardized IT performance information to structure identify potential cost savings and performance improvements.

Program and IT Project Managers

Using the PRM to help manage programs and IT projects can provide those responsible for them with:

- Stronger justification of proposed initiatives and articulation of how they could potentially contribute to outcomes;
- Additional information to manage IT initiatives and demonstrate their contribution to outcomes;
- A framework to coordinate when needed with other federal agencies on IT investments; and
- Standardized information to identify other programs or IT projects with similar missions for "best practice" consultation or other collaboration.

Importantly, the information provided by using the PRM can also be invaluable to the Congress and members of the public seeking a clearer picture of performance.

More detailed information about exactly how these groups can use the PRM is provided in Volume II of PRM Version 1.0. As with all FEA reference models, the FEA-PMO will continue to engage these users to further advance the models consistent with the needs of each user group identified above.

WHEN WILL THE PRM BE USED?

During the FY 2005 budget formulation process, agencies will align their major IT initiatives that are classified as new DME with the PRM. This alignment will be collected and monitored by OMB through the Exhibit 300. OMB is initially applying the PRM in this manner because:

- PRM Version 1.0 is a starting point that needs to be further refined. The FEA-PMO plans to use the results of this limited use of the PRM for the FY 2005 budget formulation process to develop lessons learned that inform the development of PRM Version 2.0;
- PRM Version 1.0 is being released well into many agencies' internal pre-Selection processes to submit their proposed FY 2005 budget to OMB in September; and
- The PRM requires a cultural shift and collaboration within agencies by numerous staff representing CFO, budget, program planning, and CIO perspectives.

The PRM has key intersections points with existing management processes, such as agencies' IT CPIC processes. Volume II of PRM Version 1.0 suggests how these relationships can be leveraged and supported by the PRM. The PRM and the process to use it will continue to be refined and implemented consistent with the federal budget process. The Business Reference Model 2.0 release document provides additional detail on the FEA and key milestones in the federal budget process.⁴

⁴ "The Business Reference Model Version 2.0," Federal Enterprise Architecture Program Management Office, U.S. Office of Management and Budget. June 2003.

4

How Was the PRM Developed and How Does it Fit With the Rest of the FEA?

FEAPMO

4. HOW WAS THE PRM DEVELOPED AND HOW DOES IT FIT WITH THE REST OF THE FEA?

This section provides an overview of how the PRM was developed and its key integration points with the other reference models that comprise the FEA reference model framework.

HOW WAS THE PRM DEVELOPED?

The PRM was developed using a collaborative and iterative process. The process was designed to leverage existing approaches and best practices for performance, while at the same time creating a practical framework that would achieve the purposes required. Key steps the FEA-PMO took to develop the PRM included:

1. Defined the purposes of the PRM.
2. Defined the PRM Measurement Areas by considering legislative requirements and best practice approaches to performance measurement. Figure 5 on the following page shows how each Measurement Area was identified.

FIGURE 5: LEGISLATIVE AND BEST PRACTICE DRIVERS OF PRM MEASUREMENT AREAS

	E-Gov Act and Clinger-Cohen Act	GPRA	Balanced Scorecard	Baldrige Quality Criteria	Six Sigma
Mission and Business Results		GPRA states "... plans shall contain general goals and objectives, including outcome-related goals and objectives ..."		Includes a Business Results focus	
Customer Results	E-Gov Act states "areas of performance measurement to be considered include customer service, agency productivity ..."		Includes a Customer perspective	Includes a Customer and Market Focus	
Processes and Activities		GPRA states "... plan shall contain a description of how the goals and objectives are to be achieved, including a description of the operational processes, skills and technology, and the human, capital, information, and other resources required ..."	Includes a Business Process perspective	Includes a Process Management focus	Focuses on improving business processes through quality and error reduction
Human Capital				Includes a Human Resource focus	
Technology	Clinger-Cohen Act states "performance measurements measure how well the information technology supports programs ..."				
Other Fixed Assets					

3. Within each of these Measurement Areas, the FEA-PMO identified Measurement Categories by further assessing legislative requirements, best practices, and what agencies are currently measuring in their GPRA Strategic and Performance Plans, Exhibit 300s, and PART assessments. A universe of general measures were identified that would be useful if reported to OMB. These served as the starting point for the individual Generic Measurement Indicators in each Measurement Category. Appendix C of this release document provides a comprehensive list of the sources used to inform the PRM.

4. Conducted informational briefings and proofs of concept to test the draft PRM structure. These proofs of concept included testing the PRM with the 24 Presidential E-Government Initiatives, the six priority Lines of Business identified in the President's FY 2004 Budget, and briefings and working sessions within OMB and with components of the Immigration and Nationalization Service and the Patent and Trademark Office.

5. Refined the draft PRM and supporting process based on lessons learned from the proofs of concept.

6. Obtained review and comment on the draft PRM from subject matter experts within OMB.

7. Released a PRM Working Draft for federal agency comment on April 28, 2003. To coincide with the release of the PRM Working Draft an agency overview session was held, which nearly 80 agency officials attended. The FEA-PMO also held an agency overview session for smaller agencies. When the comment period closed, 21 separate federal agencies provided comments using a standardized PRM Comment Form. The FEA-PMO analyzed the comment forms and identified 326 separate comments that agencies made on the PRM. These comments were very instructive for the FEA-PMO as it refined the draft PRM.
8. Refined the draft PRM based on comments on the PRM Working Draft. Within the time constraints and available resources, the FEA-PMO substantially addressed the comments provided. A number of insightful comments will be reconsidered as the FEA-PMO develops PRM Version 2.0
9. Finalized integration of the PRM into OMB Circular A-11 guidance.
10. Provided a draft of the PRM Version 1.0 for final comment to the key councils, including the CFO Council and CIO Council.
11. Incorporated comments from the Councils and published two PRM Version 1.0 release documents that agencies can use to improve performance and meet the PRM-related requirements of the FY 2005 OMB Circular A-11.

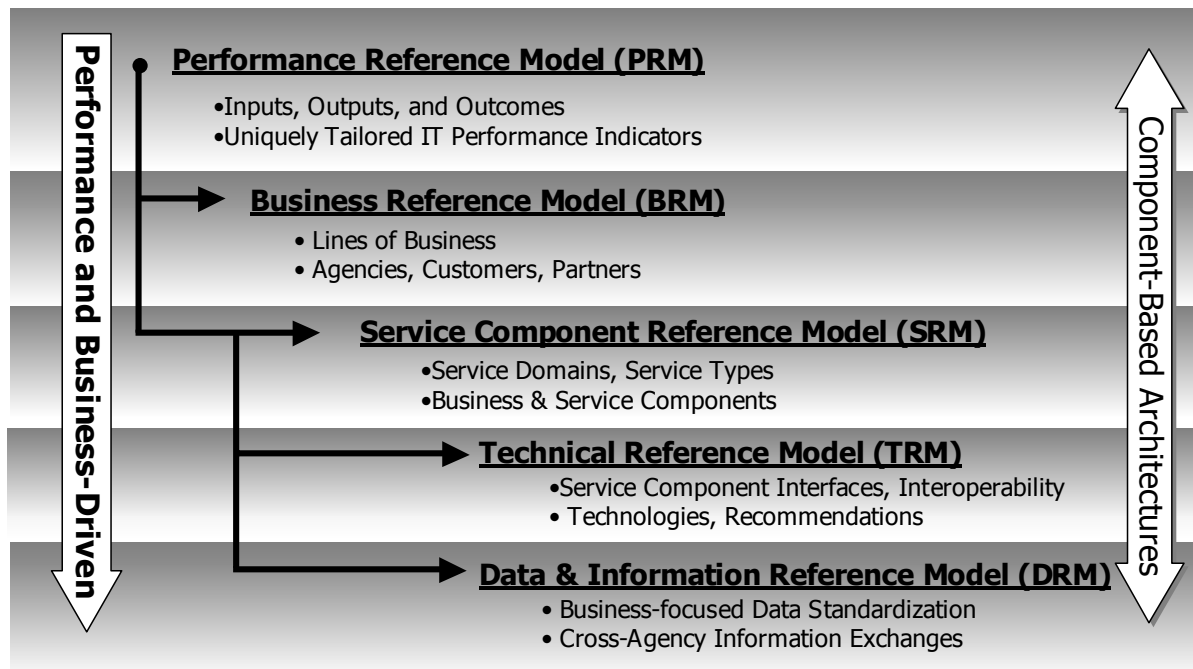
During this process the FEA-PMO staff met with more than 200 government officials within OMB and at federal agencies to discuss the PRM. This PRM Version 1.0 release document is the first in a series of iterative refinements and improvements to the PRM. The FEA-PMO will work with agencies, key councils, and other stakeholders on PRM Version 2.0 which agencies will use as they develop their FY 2006 budgets.

WHAT IS THE FEDERAL ENTERPRISE ARCHITECTURE?

To facilitate the federal government's transformation towards being more citizen-centered and results-oriented, the FEA-PMO is developing the FEA. The FEA is being constructed through five interrelated "reference models" designed to identify collaboration opportunities both within and across traditional organizational boundaries. On July 24, 2002, the FEA-PMO released BRM Version 1.0, which describes the federal government's Lines of Business and its services to the citizen – independent of the agencies, bureaus, and offices that perform them.⁵ The FEA Reference Model Framework is shown in Figure 6 on the following page.

⁵ "The Business Reference Model Version 1.0," Federal Enterprise Architecture Program Management Office. July 24, 2002.

FIGURE 6: THE FEA REFERENCE MODEL FRAMEWORK



Business Reference Model

The BRM now in version 2.0, is a function-driven framework that describes the Lines of Business and Sub-Functions performed by the federal government independent of the agencies that perform them.⁶ The model provides a common understanding of the federal government's business for agencies, oversight bodies, IT decision makers, and other stakeholders; and facilitates the identification of cross-agency opportunities and redundancies.

Of all the FEA reference models, the PRM is most closely tied to the BRM. The BRM provides a functional description of what Lines of Business and Sub-functions agencies currently conduct. Over time, the PRM can be applied to BRM Sub-functions to assess how well agencies conduct them. The BRM provides the content for the Mission and Business Results Measurement Area and the starting point to determine which Processes and Activities agencies should measure through the PRM. How the PRM is "operationalized" will vary depending on whether the Line of Business or Sub-function is in the Services for Citizens Measurement Area (e.g. Border Security) or Management of Government Resources (e.g. Goods Acquisition).

Service Component Reference Model

SRM now in version 1.0, is a business-driven, functional framework that classifies Service Components with respect to how they support business and/or performance objectives.⁷ The SRM is

⁶ "The Business Reference Model Version 2.0," Federal Enterprise Architecture Program Management Office, U.S. Office of Management and Budget, June 2003.

⁷ "The Service Component Reference Model Version 1.0," Federal Enterprise Architecture Program Management Office, U.S. Office of Management and Budget, June 2003.

structured across horizontal service areas that, independent of the business functions, can provide a leverage-able foundation for re-use of applications, application capabilities, components, and business services.

The SRM can be used to identify collaboration opportunities around services and applications. If capitalized on, these opportunities will lead to performance improvements as measured through the PRM, such as reduced costs, reduced time to implement services and applications, and ultimately improvements in processes and activities and results.

Technical Reference Model

The TRM, now in version 1.0, is a framework to describe how technology supports the delivery, exchange, and construction of service components.⁸ The TRM outlines the technology elements that collectively support the adoption and implementation of component-based architectures, as well as the identification of proven products and toolsets that are embraced by government-wide initiatives such as FirstGov, Pay.gov, and the 24 Presidential Priority E-Government Initiatives.

Technology decisions will need to be made in the specific context of the performance improvements they will contribute to as articulated through the PRM.

Data and Information Reference Model

The DRM, still being developed, will describe at an aggregate level the data and information that support program and business line operations. The DRM will help describe the interactions and information exchanges that occur between the federal government and its customers, stakeholders, and business partners. The DRM will categorize the government's information along general content areas specific to BRM Sub-functions and decompose those content areas into greater levels of detail, ultimately to data elements that are common to many business processes.

Data required to conduct business should be chosen in the specific context of the performance improvements having that data can help the business achieve. Prudent data management is also a key strategy to improving performance through the PRM.

⁸ "The Technical Reference Model Version 1.0," Federal Enterprise Architecture Program Management Office, U.S. Office of Management and Budget. June 2003.

Federal Enterprise Architecture Management System

The FEA-PMO will make available for selected agency officials and OMB the Federal Enterprise Architecture Management System (FEAMS). FEAMS is a web-based tool that will display how all major IT initiatives in the federal government can be characterized through each FEA reference model. FEAMS will be directly populated through the budget submissions that agencies send to OMB each September. More specifically, the information agencies provide in their Exhibit 300s when answering FEA-related questions will be used to populate FEAMS. Once this occurs, selected federal staff at each agency and within OMB will be able to scan the entire federal IT portfolio to identify collaboration opportunities.

5.

What Happens Next
with the PRM?

FEAPMO

5. WHAT HAPPENS NEXT WITH THE PRM?

This section provides a summary of the PRM release document and information on how the FEA-PMO will continue to evolve the PRM.

THE PRM IS A RESOURCE TO IMPROVE PERFORMANCE

In summary, the PRM is a flexible tool designed to help agencies improve IT performance. The extent of its implementation will vary and its usefulness will depend in part upon other existing frameworks agencies use and the degree of improvement needed. Nevertheless, the PRM is a framework to help drive federal-wide progress consistent with the model's three main purposes:

- Enhanced performance information;
- Clear line of sight to results; and
- Improved performance through collaboration across organizational boundaries.

PRM Version 1.0 is a starting point. But in the spirit of continuous improvement the FEA-PMO will actively seek comment and input to create PRM Version 2.0. Lessons learned through applying the PRM to new DME IT initiatives in the FY 2005 budget formulation cycle will be used to drive how the PRM evolves from its current form to version 2.0.

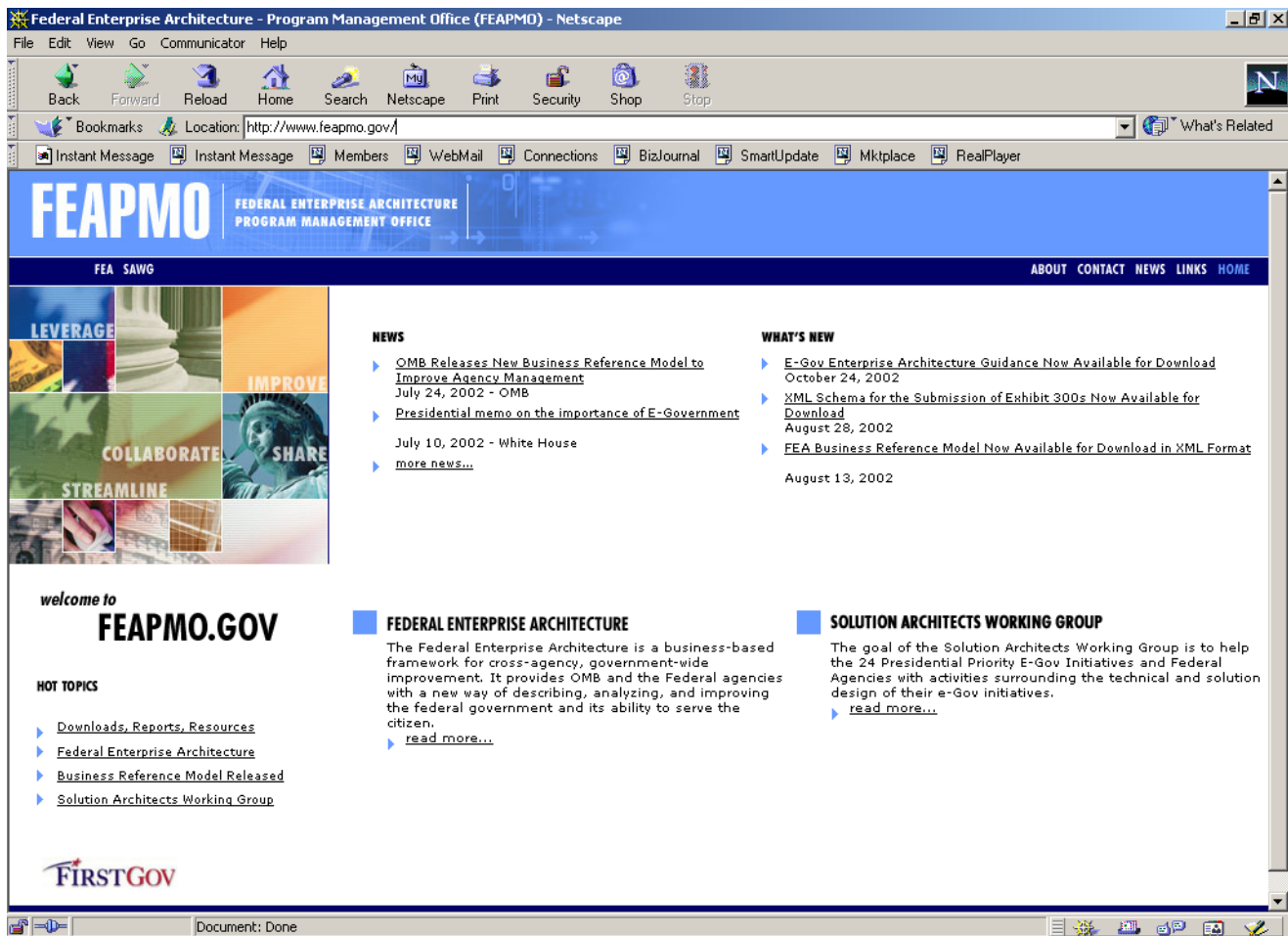
The FEA-PMO will also seek to further engage the financial management and human capital communities to improve the PRM.

THE FEA-PMO WILL CONTINUE TO COMMUNICATE WITH AGENCIES

For the PRM and other FEA Reference Models to truly help agencies and OMB, information about the models must be widely and readily available. Acknowledging this, the FEA-PMO has instituted a number of ways through which agencies can learn about the FEA and other related activities. These include:

- The FEA-PMO website, which is www.feapmo.gov. At the site agencies can access important FEA-related information including downloading Extensible Markup Language (XML) versions of the latest reference models. A screenshot of this web site is shown in Figure 7 below:

FIGURE 7: THE FEA-PMO WEB SITE, WWW.FEAPMO.GOV



- Reference model release documents, such as this one for the PRM;
- The Federal Enterprise Architecture Management System (FEAMS);
- Public forums and conferences; and
- Regularly scheduled council and agency meetings.

PROVIDING COMMENTS ON THE PRM AND OTHER FEA REFERENCE MODELS

The FEA-PMO will accept comments on the PRM Version 1.0 and other FEA reference models at any time. The FEA-PMO will seek to address all comments submitted.

Comments may be provided by e-mail, telephone, mail, fax, or in-person discussions with FEA-PMO staff. Those wishing to comment on the PRM are encouraged to visit www.feapmo.gov for additional information about the FEA reference model framework.

■ Comments can be e-mailed to support@feapmo.gov. The e-mail should include a contact name, e-mail address, and phone number.

■ Comments can be provided by telephone to FEA-PMO staff by calling (202) 395-0379. If no one is available to take your call, leave a detailed message and your phone call will be returned.

■ Comments can be mailed to the E-Gov Program Management Office located in the New Executive Office Building.

■ Comments can be faxed to (202) 395-0342. The fax should include a contact name, phone number, and return fax number.

NEXT STEPS FOR THE PRM

Key next steps for the PRM include:

■ Agencies use PRM Version 1.0 to improve performance as they see fit, and as required in OMB Circular A-11 when submitting FY 2005 Exhibit 300s for DME IT initiatives.

■ OMB will assess agency Exhibit 300 submissions for DME IT initiatives to determine (1) the extent of alignment with the PRM (2) lessons learned and examples to incorporate into PRM Version 2.0 and (3) potential collaboration and performance improvement opportunities.

■ The FEA-PMO will continue to accept comments on PRM Version 1.0 and formally seek further agency feedback and examples as it develops PRM Version 2.0 for use in the FY 2006 budget formulation process.

■ Seek to further integrate the PRM with key CFO initiatives, including the OMB "Super Circular" on financial management and reporting.

■ Seek to further refine the placeholder "Human Capital" and "Other Fixed Asset" Measurement Areas by working with key councils and decision-makers, including OPM and the newly appointed Chief Human Capital Officers.

As with the evolution from the draft PRM to PRM Version 1.0, the FEA-PMO will use standardized criteria grounded in the main purposes of the PRM to guide how the PRM is improved from Version 1.0 to Version 2.0.

A.

Mission and
Business Results

FEAPMO

APPENDIX A: MISSION AND BUSINESS RESULTS MEASUREMENT CATEGORIES, GENERIC MEASUREMENT INDICATORS, AND EXAMPLES

This Appendix provides the Generic Measurement Indicators for the three Measurement Categories of the Mission and Business Results Measurement Area of the PRM. These categories are Services for Citizens, Support Delivery of Services, and Management of Government Resources. This Measurement Area aligns with Business Areas described in the Business Reference Model Version 2.0. For the purpose of completing Exhibit 300, each new DME IT initiatives must identify or develop at least one Operationalized Measurement Indicator in the Mission and Business Results Measurement Area. The Operationalized Measurement Indicators agencies create should be determined by referencing the outcome indicators identified through GPRA Strategic Plans, budget submissions, and PART assessments.

Selected examples are shown, but agencies' use of the PRM from this point forward will create the actual inventory of Operationalized Measurement Indicators.

SERVICES FOR CITIZENS

This Measurement Category captures the extent to which results related to services that the federal government provides both to and on behalf of the American citizen are achieved.

Measurement Category ⁹	Generic Measurement Indicator Grouping ¹⁰	Examples of “Operationalized” Measurement Indicators ¹¹
COMMUNITY AND SOCIAL SERVICES- Community and Social Services includes all activities aimed at creating, expanding, or improving community and social development, social relationships, and social services in the United States. This includes all activities aimed at locality-specific or nationwide social development and general social services. This Line of Business includes general community development and social services programs, as well as earned and unearned benefit programs that promote these objectives.	• Homeownership Promotion	• Number of HOME Investment Partnership production units completed
	• Community and Regional Development	•
	• Social Services	• Number of worst-case needs households in the U.S. (households with incomes below 50 percent of the local median income, who pay more than half of their income in rent or live in poor quality units)
	• Postal Services	•
DEFENSE AND NATIONAL SECURITY –TBD	•	•
DISASTER MANAGEMENT- Disaster	• Disaster Monitoring and Prediction	•

⁹ These are the Lines of Business from the Business Reference Model Version 2.0. Lines of Business in the Mode of Delivery Area are addressed in the Processes and Activities Measurement Area of the PRM.

¹⁰ These are the Sub-Functions from the Business Reference Model Version 2.0.

¹¹ As agencies use the PRM for their specific IT initiatives they will significantly expand these examples. Those shown are actual measures that agencies are using in their GPRA Strategic and Performance Plans and measures that have been determined “adequate” through PART assessments.

Measurement Category ⁹	Generic Measurement Indicator Grouping ¹⁰	Examples of “Operationalized” Measurement Indicators ¹¹
Management involves the activities required to prepare for, mitigate, respond to, and repair the effects of all disasters whether natural or man-made.	• Disaster Preparedness and Planning	• Dollar value (estimated) of disaster and property loss avoided
	• Disaster Repair and Restore	•
	• Emergency Response	• Percent of all mariners in imminent danger rescued
ECONOMIC DEVELOPMENT - Economic Development includes the activities required to promote commercial/industrial development and to regulate the American financial industry to protect investors. It also includes the management and control of the domestic economy and the money supply, and the protection of intellectual property and innovation.	• Business and Industry Development	• Number of jobs created or retained in distressed communities as a result of Economic Development Administration investments
	• Industry Sector Income Stabilization	•
	• Intellectual Property Protection	• Average time (in months) for a complete review of a patent application from filing date to issue or abandonment of the application
	• Financial Sector Oversight	•
EDUCATION – Education refers to those activities that impart knowledge or understanding of a particular subject to the public. Education can take place at a formal school, college, university or other training program. This Line of Business includes all government programs that promote the education of the public, including both earned and unearned benefit programs.	• Elementary, Secondary, and Vocational Education	•
	• Higher Education	• College completion rate of low-income college students who participant in the Trio Student Support Services program.
	• Cultural and Historic Preservation	•
	• Cultural and Historic Exhibition	•
ENERGY - Energy refers to all actions	• Energy Supply	•

Measurement Category ⁹	Generic Measurement Indicator Grouping ¹⁰	Examples of “Operationalized” Measurement Indicators ¹¹
performed by the government to ensure the procurement and management of energy resources, including the production, sale and distribution of energy, as well as the management of spent fuel resources. Energy management includes all types of mass-produced energy (e.g., hydroelectric, nuclear, wind, solar, or fossil fuels). Also included in this Line of Business is the oversight of private industry.	• Energy Conservation and Preparedness	• Amount of natural gas in the United States that can be made available to the market
	• Energy Resource Management	•
	• Energy Production	•
ENVIRONMENTAL MANAGEMENT - Environmental Management includes all functions required to monitor the environment and weather, determine proper environmental standards and ensure their compliance, and address environmental hazards and contamination.	• Environmental Monitoring and Forecasting	• Number of coastal and Great Lake States provided with improved predictive capabilities and understanding of coastal processes
	• Environmental Remediation	• Number of acres of wetlands enhanced or restored through voluntary agreements to help improve fish and wildlife populations
	• Pollution Prevention and Control	•
LAW ENFORCEMENT - Law Enforcement involves activities to protect people, places, and things from criminal activity resulting from non-compliance with U.S. laws. This includes patrols, undercover operations, response to emergency calls, as well as arrests, raids, and seizures of property.	• Criminal Apprehension	•
	• Criminal Investigation and Surveillance	•
	• Citizen Protection	• Number dismantled of 30 targeted gangs identified as most dangerous
	• Crime Prevention	•
	• Leadership Protection	•
	• Property Protection	•

Measurement Category ⁹	Generic Measurement Indicator Grouping ¹⁰	Examples of “Operationalized” Measurement Indicators ¹¹
	<ul style="list-style-type: none"> Substance Control 	<ul style="list-style-type: none"> Percent supply of illegal drugs in the United States
LITIGATION AND JUDICIAL ACTIVITIES- Litigation and Judicial Activities refers to those activities relating to the administration of justice.	<ul style="list-style-type: none"> Judicial Hearings 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Legal Defense 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Legal Investigation 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Legal Prosecution and Litigation 	<ul style="list-style-type: none"> Percent of cases successfully litigated
	<ul style="list-style-type: none"> Resolution Facilitation 	<ul style="list-style-type: none"> Percent of cases resolved using Alternative Dispute Resolution
CORRECTIONAL ACTIVITIES- Correctional Activities involves all Federal activities that ensure the effective incarceration and rehabilitation of convicted criminals.	<ul style="list-style-type: none"> Criminal Incarceration 	<ul style="list-style-type: none"> Percent crowding by Security level
	<ul style="list-style-type: none"> Criminal Rehabilitation 	<ul style="list-style-type: none"> Percent of offenders treated by the Residential Substance Abuse Treatment program arrested within one year of release
HEALTH - Health involves Federal programs and activities to ensure and provide for the health and well being of the public. This includes the direct provision of health care services and immunizations as well as the monitoring and tracking of public health indicators for the detection of trends and identification of widespread illnesses/diseases. It also includes both earned and unearned health care benefit programs.	<ul style="list-style-type: none"> Illness Prevention 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Immunization Management 	<ul style="list-style-type: none"> Number of cases of vaccine-preventable diseases in the U.S.
	<ul style="list-style-type: none"> Public Health Monitoring 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Health Care Services 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Consumer Health and Safety 	<ul style="list-style-type: none">

Measurement Category ⁹	Generic Measurement Indicator Grouping ¹⁰	Examples of “Operationalized” Measurement Indicators ¹¹
HOMELAND SECURITY - Homeland Security involves protecting the nation against terrorist attacks. This includes analyzing threats and intelligence, guarding borders and airports, protecting critical infrastructure, and coordinating the response emergencies. The Homeland Security Line of Business is defined by the President's Strategy on Homeland Security. Note: Some of the Critical Mission Areas from the President's strategy have already been identified in other Lines of Business in the BRM.	• Border and Transportation Security	•
	• Key Asset and Critical Infrastructure Protection	• Number of compromised computer systems identified and notified
	• Catastrophic Defense	•
INCOME SECURITY – Income Security includes activities designed to ensure that members of the public are provided with the necessary means – both financial and otherwise – to sustain an adequate level of existence. This includes all benefit programs, both earned and unearned, that promote these goals for members of the public.	• General Retirement and Disability	• Percent of initial disability denials correctly processed
	• Unemployment Compensation	• Improved timeliness of benefit payments
	• Housing Assistance	•
	• Food and Nutrition Assistance	•
	• Survivor Compensation	•
INTELLIGENCE OPERATIONS - TBD	•	•
INTERNATIONAL AFFAIRS AND COMMERCE - International Affairs and Commerce involves the non-military activities that promote U.S. policies and interests beyond our national borders, including the negotiation of con-	• Foreign Affairs	• Percent of participants who increased their understanding of the host country as demonstrated by a follow-up survey
	• International Development and Humanitarian Aid	• Improved and/or maintained nutritional status of targeted groups in specified percent of reporting programs

Measurement Category ⁹	Generic Measurement Indicator Grouping ¹⁰	Examples of “Operationalized” Measurement Indicators ¹¹
ders, including the negotiation of conflict resolution, treaties, and agreements. In addition, this function includes: foreign economic development and social/political development; diplomatic relations with other Nations; humanitarian, technical and other developmental assistance to key Nations; and global trade.	<ul style="list-style-type: none"> Global Trade 	<ul style="list-style-type: none">
NATURAL RESOURCES - Natural Resources includes all activities involved in conservation planning, land management, and national park/monument tourism that affect the nation's natural and recreational resources, both private and federal. Note: Energy-related natural resources are covered in the Energy Management line of business.	<ul style="list-style-type: none"> Water Resource Management 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Conservation, Marine and Land Management 	<ul style="list-style-type: none"> Number of overfished stocks out of 287 major stocks
	<ul style="list-style-type: none"> Recreational Resource Management and Tourism 	<ul style="list-style-type: none"> Percent of physical facilities rated good or fair
	<ul style="list-style-type: none"> Agricultural Innovation and Services 	<ul style="list-style-type: none">
TRANSPORTATION - Transportation involves all federally supported activities related to the safe passage, conveyance, or transportation of goods and/or people.	<ul style="list-style-type: none"> Air transportation 	<ul style="list-style-type: none"> Maintain at least 93 percent of active airfield pavement in fair or better condition
	<ul style="list-style-type: none"> Ground Transportation 	<ul style="list-style-type: none"> Rate of highway-related crashes
	<ul style="list-style-type: none"> Water Transportation 	<ul style="list-style-type: none">
	<ul style="list-style-type: none"> Space Operations 	<ul style="list-style-type: none">
WORKFORCE MANAGEMENT – Workforce Management includes those activities that promote the welfare of	<ul style="list-style-type: none"> Training and Employment 	<ul style="list-style-type: none"> Percent increase in the employment, retention, and earnings of individuals registered under the Workforce Investment Act adult program

Measurement Category ⁹	Generic Measurement Indicator Grouping ¹⁰	Examples of “Operationalized” Measurement Indicators ¹¹
the Nation's workforce by improving their working conditions, advancing opportunities for profitable employment, and strengthening free collective bargaining.	• Labor Rights Management	•
	• Worker Safety	• Number of workplaces that experienced a significant reduction in injuries following Office of Safety and Health Administration intervention
GENERAL SCIENCE AND INNOVATION - General Science and Innovation includes all Federal activities to meet the national need to advance knowledge in this area. This includes general research and technology programs, space exploration activities, and other research and technology programs that have diverse goals and cannot be readily classified into another Line of Business or Sub-function.	• Scientific and Technological Research and Innovation	•
	• Space Exploration and Innovation	•

SUPPORT DELIVERY OF SERVICES

This Measurement Category captures the extent to which intermediate outcomes related to the delivery of services are achieved.

Measurement Category	Generic Measurement Indicator Grouping	Examples of “Operationalized” Measurement Indicators ¹²
CONTROLS AND OVERSIGHT - Controls and Oversight ensures that the operations and programs of the Federal Government and its external business partners comply with applicable laws and regulations and prevent waste, fraud, and abuse.	• Corrective Action	•
	• Program Evaluation	•
	• Program Monitoring	• Percent of procurements with small businesses as compared to total prime contracts
INTERNAL RISK MANAGEMENT AND MITIGATION - Internal Risk Management and Mitigation involves all activities relating to the processes of analyzing exposure to risk and determining appropriate countermeasures.	• Contingency Planning	•
	• Continuity Of Operations	•
	• Service Recovery	•
LEGISLATIVE RELATIONS - Legislative Relations involves activities aimed at the development, tracking, and amendment of public laws through the legislative branch of the Federal Government.	• Legislation Tracking	•
	• Legislation Testimony	•
	• Proposal Development	•
	• Congressional Liaison Operations	•
REGULATORY DEVELOPMENT - Regulatory Development involves activities associated developing regulations, policies, and guidance to implement	• Policy and Guidance Development	•
	• Public Comment Tracking	•

¹² These are only examples. As agencies use the PRM for their specific IT initiatives they will significantly expand these examples.

Measurement Category	Generic Measurement Indicator Grouping	Examples of “Operationalized” Measurement Indicators ¹²
policies, and guidance to implement laws.	<ul style="list-style-type: none"> Regulatory Creation Rule Publication 	<ul style="list-style-type: none"> Percent of households with access to broadband services
PLANNING AND RESOURCE ALLOCATION - Planning and Resource Allocation involves the activities of determining strategic direction, identifying and establishing programs and processes, and allocating resources (capital and labor) among those programs and processes.	Budget Formulation	
	Capital Planning	<ul style="list-style-type: none"> Percent of space not producing revenue in the government-owned inventory
	Enterprise Architecture	
	Strategic Planning	
	Budget Execution	
	Workforce Planning	<ul style="list-style-type: none"> Average number of training hours completed annually in mission critical areas of acquisition, technology, business and project management
	Management Improvement	
PUBLIC AFFAIRS - Public Affairs involves the exchange of information and communication between the Federal Government, citizens and stakeholders in direct support of citizen services, public policy, and/or national interest.	Customer Services	
	Official Information Dissemination	
	Product Outreach	
	Public Relations	
REVENUE COLLECTION - Revenue Collection includes the collection of Government income from all sources. Note: Tax collection is accounted for in the Taxation Management Sub-Function in the General Government Line of Business.	Debt Collection	
	User Fee Collection	<ul style="list-style-type: none"> Percent increase in entry fee receipts
	Federal Asset Sales	

Measurement Category	Generic Measurement Indicator Grouping	Examples of “Operationalized” Measurement Indicators ¹²
GENERAL GOVERNMENT - General Government involves the general overhead costs of the Federal Government, including legislative and executive activities; provision of central fiscal, personnel, and property activities; and the provision of services that cannot reasonably be classified in any other Line of Business. As a normal rule, all activities reasonably or closely associated with other Lines of Business or Sub-Functions shall be included in those Lines of Business or Sub-Functions rather than listed as a part of general government. This Line of Business is reserved for central government management operations; agency-specific management activities would not be included here.	• Central Fiscal Operations	•
	• Legislative Functions	•
	• Executive Functions	•
	• Central Property Management	•
	• Central Personnel Management	•
	• Taxation Management	• Percent of individual tax returns filed electronically
	• Central Records and Statistics Management	•

MANAGEMENT OF GOVERNMENT RESOURCES

This Measurement Category captures the extent to which intermediate outcomes related to back office support that enables government to operate efficiently are achieved.

Measurement Category	Generic Measurement Indicator Grouping	Examples of “Operationalized” Measurement Indicators ¹³
ADMINISTRATIVE MANAGEMENT - Administrative Management involves the day-to-day management and maintenance of the internal infrastructure.	• Facilities, Fleet, And Equipment Management	• Percent of government-owned assets with Return on Investment of at least six percent
	• Help Desk Services	•
	• Security Management	•
	• Travel	• Number of travel arrangements fully completed in the consolidated, fully integrated e-Travel
	• Workplace Policy Development And Management	•
FINANCIAL MANAGEMENT – The use of financial information to measure, operate and predict the effectiveness and efficiency of an entity’s activities in relation to its objectives. The ability to obtain and use such information is usually characterized by having in place policies, standards, and a system of controls that reliably capture and report activity in a consistent manner.	• Accounting	•
	• Budget and Finance	•
	• Payments	•
	• Collections and Receivables	•
	• Asset and Liability Management	•
	• Reporting and Information	•
HUMAN RESOURCE MANAGEMENT -	• Benefits Management	• User / customer satisfaction

¹³ These are only examples. As agencies use the PRM for their specific IT initiatives they will significantly expand these examples.

Measurement Category	Generic Measurement Indicator Grouping	Examples of “Operationalized” Measurement Indicators ¹³
Human Resource Management involves all activities associated with the recruitment and management of personnel.	• Personnel Management	•
	• Payroll Management and Expense Reimbursement	•
	• Resource Training And Development	•
	• Security Clearance Management	•
	• Staff Recruitment And Employment	• Percent of agency leadership who report that OPM's human capital resources enabled them to develop and maintain the workforce needed to meet their mission.
INFORMATION AND TECHNOLOGY MANAGEMENT – Information and Technology Management involves the coordination of information technology resources and systems required to support or provide a citizen service.	• Lifecycle/Change Management	•
	• System Development	•
	• System Maintenance	•
	• IT Infrastructure Maintenance	• Percent of systems integrated/interfaced
	• IT Security	•
	• Record Retention	•
	• Information Management	•
SUPPLY CHAIN MANAGEMENT - Supply Chain Management involves the purchasing, tracking, and overall management of goods and services.	• Goods Acquisition	• Award contracts over \$25,000 using performance-based contracting techniques for not less than 30% of total eligible service contract dollars
	• Inventory Control	•
	• Logistics Management	•

Measurement Category	Generic Measurement Indicator Grouping	Examples of “Operationalized” Measurement Indicators ¹³
	<ul style="list-style-type: none"> Services Acquisition 	<ul style="list-style-type: none"> Percent of GSA contract dollars reported as performance-based contracts



B.

Customer Results,
Processes and
Activities, and
Technology

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APPENDIX B: CUSTOMER RESULTS, PROCESSES AND ACTIVITIES, AND TECHNOLOGY MEASUREMENT CATEGORIES, GENERIC MEASUREMENT INDICATORS, AND EXAMPLES

This Appendix provides the Measurement Categories and Generic Measurement Indicators for the Customer Results, Processes and Activities, and Technology Measurement Areas of the PRM. For the purposes of completing Exhibit 300, each new DME IT Initiative must identify or develop at least one Operationalized Measurement Indicator in each of these three Measurement Areas. Selected examples or language to help agencies create their own Operationalized Measurement Indicators is also provided.

However, agencies' use of the PRM from this point forward will create the actual inventory of Operationalized Measurement Indicators.

CUSTOMER RESULTS

Measurement Category	Generic Measurement Indicator Grouping	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
Customer Benefit	• Customer Satisfaction	• # or % of customers of the relevant process who report they are satisfied with the services or products received. This can vary by type of product or service and by attribute, such as quality, timeliness, or courtesy
	• Customer Retention	• # and/or % of current/prior customers who have requested/received additional services/support
		• # or % of customers of the relevant process who continue to receive products or services
	▪ Customer Complaints	• # of complaints received from customers compared to the total # of customers receiving products or services
	▪ Customer Impact or Burden	• Time needed to obtain products or services without using the relevant initiative or process compared to the total time needed with using the initiative or process. This time savings can then be divided by the total number of customers. This time savings can then be monetized if desired.
		• # of transactions generated for the customer
		• Amount of revenue generated for the customer
		• Amount or % savings to the customer
	▪ Customer Training	• # or % of customers receiving training
		• % of customers satisfied with training
		• # of avenues of training available to customers

Measurement Category	Generic Measurement Indicator Grouping	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
Service Coverage	New Customers & Market Penetration	• # of new customers within a given time period divided by the total number of customers at the end of the time period
		• # and/or % of customers that receive products or services as a percent of the total population of potential customers. This can also be defined as "market share"
		• # and/or % of total products or services produced that are used by customers.
	Frequency & Depth	• # of visitors to the relevant web-site or physical location per hour, day, week, month, quarter, or year
		• # and/or % of total products or services produced that are used by customers
	Service Efficiency	• Ratio of man-hours to number of service requests
Timeliness & Responsiveness	Response Time	▪ Average initial response time to customer inquiries
		▪ Average time to resolve customer inquiries by type of inquiry
		▪ Average time between request and fulfillment
	Delivery Time	• # and/or % of products or services delivered within given time standard
Service Quality	Accuracy of Service or Product Delivered	• # and/or % of products or services that are provided to customers that meet pre-determined quality standards or customer specifications
		• # and/or % of inquiries by customers that are successfully resolved or answered the first time the customer makes contact
		• # of problem-related contacts by customers divided by the total # of customers making inquiries
Service Accessibility	Access	• # and/or % of products or services that customers can access

Measurement Category	Generic Measurement Indicator Grouping	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
		<ul style="list-style-type: none"> # of means or “access channels” through which customers can obtain products or services. These can include the telephone, Internet, wireless communications, paper-based forms, fax, or in-person visits.
	▪ Availability	<ul style="list-style-type: none"> # of hours each day in which end-customers can obtain products or services. # of hours each day in which end-customers can obtain assistance.
	▪ Automation	<ul style="list-style-type: none"> The degree to which customers can order or obtain products or services without assistance. This can include the % of total products or services available through the Internet or telephone
	▪ Integration	<ul style="list-style-type: none"> # of separate sources or locations a customer must use to obtain products or services. This can be referred to as “one-stop shopping”

PROCESSES AND ACTIVITIES

Measurement Category	Generic Measurement Indicator Grouping	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
Financial	• Financial Management	<ul style="list-style-type: none"> The degree to which critical financial measures are achieved, including: reconciled/unreconciled cash balances; suspense clearing; delinquent accounts receivable from public; electronic payments; percent of non-credit-card invoices paid on time; interest penalties paid; travel card delinquency trends; and/or purchase card delinquency trends.
	• Costs	<ul style="list-style-type: none"> The total costs associated with producing products or services divided by the total # produced. These can include interim work products or process steps and end products or process steps.
		<ul style="list-style-type: none"> # of Full-Time Equivalents associated with the relevant process compared to the total operating costs associated with the process. Operating costs can be defined as total direct costs + total indirect costs.
		<ul style="list-style-type: none"> Total HR costs (including overtime) as a % of operating cost
		<ul style="list-style-type: none"> Total IT costs as a % of operating cost
		<ul style="list-style-type: none"> The total direct costs compared to the total indirect costs
		<ul style="list-style-type: none"> The total costs associated with the relevant process
		<ul style="list-style-type: none"> % of cost per unit of product produced/service provided divided by the income received per unit of product produced/service provided. This indicator may help determine how much profit per unit is generated and whether costs are higher than expected.
	• Planning	<ul style="list-style-type: none"> Actual expenditures associated with the relevant process divided by the planned expenditures.

Measurement Category	Generic Measurement Indicator Grouping	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
	Savings & Cost Avoidance	<ul style="list-style-type: none"> The dollars that would have been spent but were not. These would generally be attributable to the relevant IT initiative or process improvement.
		<ul style="list-style-type: none"> The dollars that would have been spent but were not because collaboration occurred with another agency or organization
		<ul style="list-style-type: none"> Ratio of achieved savings to planned savings
Productivity & Efficiency	Productivity	<ul style="list-style-type: none"> # of products or services produced per hour, day, week, month, quarter, or year
		<ul style="list-style-type: none"> # of products or services produced per hour, day, week, month, quarter, or year divided by the number of relevant Full-Time Equivalents. This measure can also be defined in the reverse, using the relevant Full-Time Equivalents divided by the total number of products or services
	Efficiency	<ul style="list-style-type: none"> The amount of resources (e.g. storage capacity or Full-Time Equivalents) utilized divided by the total amount of resources or capacity available # and/or % improvement or reduction to products, services, or other characteristics or attributes (e.g. reduction in the number of cases that are backlogged) # and/or % of any products or services, either produced through the relevant process or provided to the relevant process, that are conducted through the Internet or other electronic media, such as CDs
Cycle Time & Timeliness	Cycle Time	<ul style="list-style-type: none"> Time to complete the relevant process step(s) and/or produce or deliver products and services
		<ul style="list-style-type: none"> Total cycle time to produce a product or service compared to the total time within the process where value is not being added. This can also be referred to as how long the product or service “waits” in the process before being moved to the next phase or provided to the customer.
		<ul style="list-style-type: none"> Ratio of total resolution time to total # of rejects/exceptions

Measurement Category	Generic Measurement Indicator Grouping	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
		<ul style="list-style-type: none"> IT time per unit to produce/ deliver products and services
	<ul style="list-style-type: none"> Timeliness 	<ul style="list-style-type: none"> The total actual time associated with the relevant process divided by total planned time
Quality	<ul style="list-style-type: none"> Errors 	<ul style="list-style-type: none"> % of products or services provided without errors
		<ul style="list-style-type: none"> # and/or % of rejects/exceptions produced during the process of making product unit/delivering a service
	<ul style="list-style-type: none"> Complaints 	<ul style="list-style-type: none"> The number of products or services produced that meet requirements divided by the total number of products or services produced. This can also be referred to as the “error rate” and can be measured for interim and final outputs or process steps.
Security & Privacy	<ul style="list-style-type: none"> Security¹⁴ 	<ul style="list-style-type: none"> The degree to which confidentiality is improved. This should be consistent with the relevant guidance and IT security performance gap identified in Section II.B of the Exhibit 300.
		<ul style="list-style-type: none"> The degree to which integrity is improved. This should be consistent with the relevant guidance and IT security performance gap identified in Section II.B of the Exhibit 300.
	<ul style="list-style-type: none"> Privacy 	<ul style="list-style-type: none"> The degree to which availability is improved. This should be consistent with the relevant guidance and IT security performance gap identified in Section II.B of the Exhibit 300.
		<ul style="list-style-type: none"> The degree to which privacy is addressed

¹⁴ See other relevant guidance, for example NIST's draft “Federal Information Processing Standard 199, Standards for Security Categorization of Federal Information and Information Systems.”

Measurement Category	Generic Measurement Indicator Grouping	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
Management & Innovation	• Participation	• # and/or % of entities involved in or participating in the relevant process. This participation can vary by extent, quality, or attribute (e.g. meet pre-determined criteria or requirements) that is important to the process.
	• Policies	• # and/or % of relevant processes that have documented policies or procedures divided by the total number of relevant processes
	• Compliance	• The degree to which the process complies with some or all applicable mandates and requirements. These include laws, regulations, policies, procedures, or other process or organizational requirements. This can be assessed through targeted compliance audits.
		• The degree to which relevant people, technology, or other fixed assets comply with applicable process mandates and requirements. This can be assessed through compliance or use rates.
	• Risk	• # and/or % significant risk events that were not identified in relevant risk management and project management plans or process procedures that actually occurred
	• Knowledge Management	• The degree to which procedures to capture, share, and communicate relevant intellectual capital or information exist and are implemented throughout the organization. This can be assessed through targeted evaluations.
	• Innovation & Improvement	• Level of EA maturity according to GAO or other frameworks
		• # of process improvements. This could include the average length that existing processes or IT are used or unique ideas that use technology to save cost, time, or streamline processes

TECHNOLOGY

Measurement Category	Generic Measurement Indicator Grouping ¹⁵	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
Financial	Overall Costs	• The total IT costs associated with the relevant process divided by the number of products or services produced.
		• The total IT costs divided by total operating costs. This can be compared to relevant industry or peer averages.
		• The total cost avoidance from eliminating IT redundancies
	Licensing Costs	• The total IT licensing costs divided by the total IT costs.
	Support Costs	• The total IT support costs divided by the total IT costs.
	Operations & Maintenance Costs	• The total IT replacement or refreshment costs divided by total IT costs. This can include software upgrades or hardware replacements.
		• The total IT operations and maintenance costs divided by total IT costs. These costs generally occur in the implementation phases of the IT lifecycle.
	Training & User Costs	• Application cost per user of the application.
		• Costs spent on training required to operate IT system.
Quality	Functionality	• The degree to which the IT provides the technical functionality or capabilities as defined in requirements documents. The FEA Services Component Reference Model (SRM) describes these capabilities.

¹⁵ Certain Measurement Indicators related to IT management, specifically cost and schedule, are addressed in other areas of the Exhibit 300 and consequently not included in the PRM. Specific Technology indicators for IT security are also addressed in other areas of the Exhibit 300 and not included in the PRM.

Measurement Category	Generic Measurement Indicator Grouping ¹⁵	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
Efficiency	IT Composition	• % type of IT system, including custom code, COTS, GOTS, or mixed
		• Extent to which IT system meets existing commercial or industry best practices
		• # and/or % of core applications which require technology modernization
	Compliance & Deviations	• % of IT that complies with agency EA framework
		• # of applications or systems that do not meet pre-determined IT standards
Efficiency	Response Time	• Time to respond per query
		• % of critical defects resolved within standard time interval
	Interoperability	• # of applications or systems that either can be or are linked to or consolidated with other applications or systems divided by the total number of relevant applications or systems
	Accessibility	• # of means through which other IT, end-users, or customers can access an application or system. These can include web-based access and wireless communications
	Load levels	• # of simultaneous end-users an application or system can provide service to
	Improvement	• Extent improvement in technical capabilities or characteristics
Information & Data	External Data Sharing	• The total amount of relevant data or information that is electronically shared and re-used by more than one organization divided by the total amount of data or information available
	Data Standardization or Tagging	• # of relevant data elements for which standards and definitions exist divided by the number of data elements
	Internal Data Sharing	• The number of applications that are linked to and share information with a relevant application that collects data

Measurement Category	Generic Measurement Indicator Grouping ¹⁵	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
	• Data Reliability & Quality	• The degree to which data and information is up-to-date and current as measured against pre-determined requirements
		• The degree to which data and information is whole and complete as measured against pre-determined requirements
		• # and/or % of data or information that is incorrect or has errors. This can vary by the type of data element
		• Degree to which data integrity standards are met
		• Degree to which data is consistent. This can be measured by the degree to which data is consistent when compared to pre-determined requirement for data inter-relationships. For example whether the total of subsidiary ledgers is greater than parent total.
	• Data Storage	• Size of data that can be or will be captured and stored
Reliability & Availability	• Availability	• The time systems or applications are available to end-users divided by the total time in the relevant time period
		• Average # of system users per month
		• The degree to which capacity planning results in sufficient capacity
	• Reliability	• The unplanned time systems or applications are not available to end-users due to hardware failure divided by the total time in the relevant time period
		• The unplanned time systems or applications are not available to end-users due to software failure divided by the total time in the relevant time period
		• The amount of unplanned system or application maintenance divided by the total amount of maintenance. This amount can be measured in cost or the number of separate maintenance activities

Measurement Category	Generic Measurement Indicator Grouping ¹⁵	Examples / Language to Help Agencies Create “Operationalized” Measurement Indicators
Effectiveness	<ul style="list-style-type: none"> User Satisfaction 	<ul style="list-style-type: none"> # and/or % of end-users of the application or system who report they are satisfied with the application or system. This can vary by the capabilities, functionality, usability, or availability of the system, and its overall perceived contribution to performance. User surveys and focus groups can be used to determine satisfaction levels.
	<ul style="list-style-type: none"> User Requirements 	<ul style="list-style-type: none"> # and/or % of end-users who report they use the application or system as intended in user requirements. User surveys, focus groups, and targeted observations can be used to determine whether the application or system is being used as intended.
	<ul style="list-style-type: none"> IT Contribution to Process, Customer, or Mission 	<ul style="list-style-type: none"> Time saved in meeting process, customer, and/or mission goals
		<ul style="list-style-type: none"> Increase in demand for IT services and/or investments
		<ul style="list-style-type: none"> % reduction in manual processes based on technology and application delivery or improvements
		<ul style="list-style-type: none"> % reduction in time to complete a business function achieved through the introduction of IT
		<ul style="list-style-type: none"> # and/or % of customer-facing functions tracked and rated as improved through the application of IT



Key Terms and List of Sources

FEAPMO

APPENDIX C: KEY TERMS AND LIST OF SOURCES

This Appendix provides a list of key terms and acronyms related to the PRM and lists some of the primary sources used to develop the PRM.

KEY TERMS AND ACRONYMS

BRM – Business Reference Model, one of the five models in the Federal Enterprise Architecture reference model framework.

CFO – Chief Financial Officer, generally responsible for agency-wide budget and performance measurement activities.

CIO – Chief Information Officer, generally responsible for agency-wide IT and information management activities.

CTO – Chief Technology Officer, generally responsible for agency-wide IT management activities.

DME – Development, Modernization, or Enhancement, an IT initiative funding category depicting IT efforts other than maintenance or “steady state.”

DRM – Data Reference Model, one of the five models in the Federal Enterprise Architecture reference model framework.

EA – Enterprise Architecture, the discipline of creating a blueprint of an agency's business, data, applications, and technology.

FEA – Federal Enterprise Architecture, the collection of five inter-related reference models designed to spur cross-agency analysis and collaboration.

FEAMS – Federal Enterprise Architecture Management System, a read-only web-based system that will allow selected federal staff to view how major IT initiatives align with the FEA reference models.

FEA-PMO – Federal Enterprise Architecture Program Management Office, office within the U.S. Office of Management and Budget that is developing the FEA reference model framework.

GPRA – Government Performance and Results Act, requires agencies to produce Strategic Plans, Performance Plans, and Performance Reports.

IT CPIC – IT Capital Planning and Investment Control, set of federal and agency processes designed to Select, Control, and Evaluate IT investments.

IT Project Manager – The individual responsible for managing an IT investment activity.

Line of Business Owner – An agency that has been designated by the President's Management Council to lead federal-wide collaboration around a Line of Business or Sub-function in the Business Reference Model.

Line of Sight – The indirect or direct cause and effect relationship from a specific IT investment to the processes it supports, and by extension the customers it serves and the mission-related outcomes it contributes to.

Managing Partner – The federal agency that has the lead on one of the 24 Presidential E-Gov Initiatives.

Measurement Area – The highest-level organizing framework of the FEA Performance Reference Model.

Measurement Category – Groupings of Generic Measurement Indicators within each FEA Performance Reference Model Measurement Area.

Measurement Indicator – Generic measurements organized within a FEA Performance Reference Model Measurement Category. These are the starting points for agencies to create the Operationalized Measurement Indicators for their specific environment.

Operationalized Measurement Indicator – The indicator that an agency creates that is uniquely tailored to the agency's specific environment.

PART – Program Assessment Rating Tool, a set of program evaluation questions used to analyze federal programs that is part of the President's Budget and Performance Integration initiative.

PRM – Performance Reference Model, one of the five models in the Federal Enterprise Architecture reference model framework.

Program Manager – A business official that is responsible for making decisions and managing a federal program or process.

SRM – Service Component Reference Model, one of the five models in the Federal Enterprise Architecture reference model framework.

TRM – Technical Reference Model, one of the five models in the Federal Enterprise Architecture reference model framework.

PMA – President's Management Agenda, the list of federal-wide initiatives the President has identified as critical to improving government. These are Budget and Performance Integration, Competitive Sourcing, Expanding E-Government, Improved Financial Management, and Strategic Management of Human Capital.

LIST OF SOURCES

These are some of the primary sources the FEA-PMO used to develop version 1.0 of the Performance Reference Model. Agencies may find this list useful as they seek additional guidance and perspective on the discipline of performance measurement.

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